FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

Volume 32—Number 9 | FEBRUARY 27, 1960 | 1 Year $5, 2 Years $8

USDA Discourages Proposed Poultry Marketing Bills

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—U.S. Department of Agriculture officials dropped buckets of icy cold water on the proposed legislation to bring poultry and egg marketing under marketing and agreement orders when USDA officials appeared before a subcommittee of the Senate Agriculture Committee this week.

The low interest of this committee in the measure may be found in the fact that no formal member of the committee appeared to dignify the session with his presence and, after a long delay, a substitute senator came in to hear testimony from USDA officials.

They stated, in effect, that it would be unwise for USDA to get into the poultry industry operations through the provisions of the bills now pending.

Hermon Miller, chief of the USDA poultry branch, testified that the best solution to the poultry and egg industry problems was to let the facts of natural economics run their course, and that such corrections will remedy pricing for those commodities.

Mr. Miller cited the classic formula that USDA intervention now to

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Grain, Feed Dealers National Convention Set for March 6-8

KANSAS CITY, MO.—Food & Drug Administration regulations, the Uniform Grain Storage Agreement, farmer-feed dealer relationships and wheat producer-grain trade coordination all will be under discussion at the 64th annual Grain & Feed Dealers National Assn. meeting March 6-8 at the Hotel Muehlebach. Besides these topics, a host of committee meetings will be held to discuss activities and give reports.

Although the general convention sessions don't get underway until Monday, March 7, a number of committee meetings and other events will be held for three days prior to this.

Madison Clement, Waco, Texas, Grain & Feed Dealers National Assn. president, will deliver the keynote address to officially open the first general convention session. Dr. Clifford M. Hardin, chancellor, University of Nebraska, will follow with a talk.

Sen. Thruston B. Morton (R., Ky.) will deliver the luncheon address, "The Political Outlook for 1960." Sen. Morton is chairman of the Republican National Committee.

During the afternoon session, a talk on "What Farmers Will Expect from Their Feed Dealers in the 1960's" will be given by Roswell Garst, Garst & Thomas Hybrid Corn Co., Coon Rapids, Iowa. Dr. Earl L. Butz, dean of agriculture, Purdue University, will speak on "The Impact of FDA Regulations on Research and Living Standards." There also

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FEEDSTUFFS *Features This Week*

POULTRY RESEARCH—A college scientist summarizes poultry research papers presented at the Southern Agricultural Workers meeting. **Page 26.**

EGG PRODUCTION—The Midwest's problem of keeping egg production in its area is discussed in an article on **page 34.**

FEED MILL—Operation of a new Texas feed mill which produces feed to specification or for its own use is described on **page 42.**

POULTRY DISEASE—A Rutgers University scientist considers some of the nutritional aspects of poultry disease in an article on **page 82.**

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Ohio Group's President Says Advances Are Needed in Public Relations, Credit

By DON E. ROGERS
Feedstuffs Staff

TOLEDO, OHIO—Public relations, "education" and credit are the areas which George Moorhead, reelected president of the Ohio Grain & Feed Dealers Assn., Inc., believes the organization and grain and feed men in general should pay more attention to.

"Things are bad in the farm and elevator picture," he said, "but the situation can be improved with a three-point program to be promoted by the association during the coming year."

Nearly 1,000 delegates and guests registered for the convention held here Feb. 21-23 in the Commodore Perry Hotel, making it one of the largest attendance records. The first day of the convention was devoted to subjects pertaining to the grain trade and the second day's program specialized in matters of particular interest to the feed trade.

Mr. Moorhead, owner of grain elevators in Leipsic and Prentiss, Ohio, said grain and feed dealers are doing a "horrible job" of public relations and should be more aggressive in going after the things they want.

"The grain trade is accused of robbing the farmer," he stated, "but no other group is doing so much for the country for so little. We have nothing to hide and some good points to make. And among these are that we are handling food cheaper than ever before and cheaper than in any other country."

Mr. Moorhead noted that elevator operators are faced with a tough task

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New Products Group Of PENB Gets Five Projects Under Way

CHICAGO — Steps to encourage further research and processing activity on five products involving greater use of eggs were taken by the steering committee of the Poultry & Egg National Board's new products development group at its meeting Feb. 13 in Kansas City. This announcement was made by Ralph J. Thomas, PENB president and chairman of the over-all committee, and R. M. Hendrickson, marketing manager, poultry feeds, General Mills, and chairman of the steering committee.

The products and committee members in charge of stimulating programs are:

1. Orangegg concentrate—Dr. O. J. Cotterill, University of Missouri; Dr. W. J. Stadelman, Purdue University; Lloyd H. Geil, PENB.
2. Instant scrambled eggs—Virgil

(Turn to PENB, page 96)

Field Study Initiated to Find Reasons For Heavy Broiler Condemnation Loss

MACON, GA.—A field study and survey to discover the principal causes for the high percentage of condemnation of live broilers is being undertaken by two veterinarians in Georgia.

Dr. W. E. Clarke, formerly associated with the Georgia Poultry Laboratory, and Dr. J. A. Kimsey, who participated in the direction of the U.S. Department of Agriculture disease eradication program, will study the areas most seriously hit by condemnations as their first project.

Phil Campbell, Georgia commissioner of agriculture, has given his approval to the study and has indicated his department will provide funds for the salary and expenses of a full-time veterinarian.

Among the factors to be checked, as detailed studies are made of flocks, are specific breeds of broilers, types of vaccines used and the method of application, as well as heating and ventilation systems and other phases of management which could have a detrimental effect on the ultimate condition of the broiler as it is inspected in the processing plants.

Cooperating with the two veterinarians are the Georgia Poultry Laboratory, the Poultry Disease Research Center and the research department of the poultry division of the University of Georgia, under the supervision of Dr. J. Clyde Driggers.

FDA Officials Say 'Effective' Date Won't Mean 'Blitz'

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The March 6 "fully effective" date for the food additives amendment to the food and drug law will not mean any "blitz" on the use of compounds not at this point officially identified as safe and harmless, according to top officials of the Food and Drug Administration.

These officials told this reporter that they will follow a policy of reasonableness. They say that where a producer of a compound or food additive can make a showing of sincere effort to substantiate a claim either for exemption or a tolerance level for his product, FDA will grant a further extension of time for such a product.

Meanwhile, early this week FDA officials were processing papers certifying a long list of substances as being recognized as safe or indicating tolerance levels.

The officials said that there probably will be only a relatively small number of products which are not on the latest approved list or which cannot obtain an extension of time.

Not involved in these listings are drugs which are covered by the FDA policy statement under the Delaney amendment. As reported previously, the March 6 deadline is not expected to have any immediate effect on conditions now existing for these products.

Undertones of local news are that

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Virginia Feed Group Elects New Officers

By ROGER BERGLUND
Feedstuffs Managing Editor

ROANOKE, VA.—W. G. Ritchie, J. S. Ritchie & Sons, Inc., Petersburg, is the new president of the Virginia State Feed Assn.

Mr. Ritchie and other officers and directors were named at the annual Virginia Feed Convention and Nutrition Conference, held Feb. 23-24 at the Hotel Roanoke. Some 175 persons were on hand for the two-day event.

Mr. Ritchie, who served previously as vice president, succeeds R. T. Harper, Roanoke City Mills, as president.

Preston Moyers, Beacon Milling Co., Broadway, was elected vice president, and R. L. Barnett, Cooperative Mills, Inc., Roanoke, was named secretary-treasurer. Paul Williams, Richmond, is executive secretary.

Association board members are W. P. Gouldman, Gouldman Milling Co., Colonial Beach; R. B. Strickler, Rocco Feeds, Inc., Harrisonburg; Homer Kline, Homer Kline, Inc., Harrisonburg; Charles W. Wampler, Jr., Wampler Feed & Seed Co., Harrisonburg; Donald Danforth, Jr., Ralston Purina Co., Richmond; E. C. Wine, Rockingham Milling Co., Harrisonburg, and Mr. Harper.

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FEEDSTUFFS®

The Weekly Newspaper for the Feed Industry

Published by THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn.

Address Mail to: Box 67, Minneapolis 40, Minn.

Telephone FRanklin 4-5200 - All Offices Serviced by Bell System Teletype

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Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 50¢. Subscription rates: One year $5, two years $8, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least three weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising, Feedlot and Professional Nursing Home. Second-class postage paid at Minneapolis, Minn.

The regional circulation of this issue is concentrated in the northwestern states

Going Too Far

FEED MANUFACTURERS in the New England area feel that the University of Connecticut is going too far in promoting the New England College Conference laying ration to poultrymen. The college's extension division not only publishes the formula with strong recommendations that it be used, but it also lists ingredient costs. The bulletin does not state on what market the prices are based, although it does point out that they are quoted as of a particular week and are subject to variation.

Trade sources say the prices are understood to be f.o.b. Boston, which is quite a different basis than delivered at a local mill. One feed manufacturer, at least, feels that "the extension service is pushing to reduce the spread between the retail price and ingredient price." He feels that the poultryman, armed with formulas and ingredient costs, will attempt to drive down feed prices.

There's reason to be concerned with this type of over-extension of extension. Workings of the market in ingredients are not easily understood by feeders, and the miller can be put in a difficult defensive position when confronted by a price list bearing the authority of a college publication.

The bulletin goes even further, suggesting that the formula can be custom mixed for $6@8 ton. This has not only the unfair approach of suggesting a "bargaining range" to the feeder, which seems outside the scope of extension work, but it also implies some unfairness to the manufacturer of complete feeds or one who provides concentrates to mixers. Custom mixing of a complete college formula may do a job for a feeder, but it certainly is not the only way that he can fill his feed needs. The manufacturer, who has confidence in his formulas, too, should not have to defend his skill as an ingredient buyer and nutritionist against recommendations of a tax-supported institution.

Top of the Hopper

THERE'S EVIDENCE, according to swine industry sources, that the government report forecasting a reduction in the spring pig crop is causing some reaction among growers. After looking at the intentions report, many swine producers are planning to increase farrowings. This is a reaction that might well be expected, and it is likely that in spite of continued low egg prices, there will be at least some correction in the indicated steep decline in layer-type chick replacements.

There has been some debate in agricultural circles that forecasts of livestock and poultry production tend to harm price prospects by encouraging such adjustments. The answer to such arguments, of course, is that such forecasting, while bound to influence production plans—perhaps even at a cost of excess production at times—produces far less chaos than would result from complete blind flying, numbers-wise, up to the point of a marketing season crash. More frequent government reports, as some economists suggest, would help producers steer a better course, giving them a chance to lower the flaps if necessary.

A COMMON EXPRESSION in Washington relates that the Senate opens with a prayer and closes with an investigation. "This year," says Madison Clement, the Waco, Texas, man who serves the Grain & Feed Dealers National Assn. as its president, "the Senate opened with an investigation."

AN ILLINOIS CUSTOM MILLER who has a number of large hog raisers in his area who do their own grinding and mixing is getting business by

(Turn to **TOP OF THE HOPPER**, page 93)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Nothing representing a significant change in the movement of formula feeds was reported this week from anywhere around the U.S. But there appeared on the scene a bit of cautious optimism for the future. From some regions came opinions that the industry is on the threshold of "a revival of interest." Cold weather has helped the movement of cattle feeds in most northern areas. Better interest is developing in pig starters. Turkey feed demand is picking up. Ingredient markets remained in a slump this week, but there was increased interest shown in millfeeds and animal proteins. The wholesale feedstuff price index was 77.9 this week—down slightly from 78.1 the previous week, but well below the 86.4 level of a year earlier. This week's feed-grain index was 63.3, slightly under the indexes of a week ago and a year ago. The hog-corn ratio made an advance from last week's 11.9 to 12.1. A year ago it was 13.1. (Feed markets in detail on pages 94-96.)

Northwest

The bright spot this week is a show of increasing activity in poultry starter feeds, but generally the feed business is holding steady at the depressed levels of a week earlier.

The vast supply of wet corn stored on farms continues to hold sales down, both because farmers are feeding it and because they are short of capital, being unable to realize cash income from the crop.

Some manufacturers expect a significant up-turn in March, but others say they expect to live with the current situation for several months, notwithstanding the seasonal boost in poultry and turkey feed sales now getting under way.

Cattle, dairy and hog feeds are still moving well, keeping plants running five days a week and, at the least, four.

As would be expected, prices of major ingredients showed a weakening, most notably alfalfa meal, some millfeeds and linseed oil meal. Animal protein feeds were on a stronger trend, with demand fairly good and livestock receipts lighter.

Southwest

Formula feed business gave some evidence of improvement this week, and while there were mixed reports the majority were in favor of better business. The mills are running 4 to 5 days which is considered good due to the holiday on Monday.

Nearly all lines of feed shared in the improvement, but the line receiving the most favorable comment was cattle feed. Cold weather and widespread heavy snow covering were responsible for the shot in the arm for cattle feed.

The sales of hog feed, while in fair volume, were still disappointing when viewed in the light of the improved hog prices.

Price lists in most cases will remain unchanged. Major ingredients have been more stable pricewise and some items such as soybean meal, cottonseed meal, and millfeeds took on a little firmer tone due to a slightly improved demand.

A sign of encouragement was voiced by some manufacturers who reported a little better build-up of orders into next week.

Northeast

More complete dairy feeds are showing up in the over-all formula feed tonnage, but sales as a whole continued to drag. Starting feeds are also beginning to move, but as yet the tonnage doesn't amount to much.

The sales pattern remained unchanged, with dairy feeds carrying the ball, followed by egg mashes and broiler feeds.

The worst blizzard of the year engulfed many sections of this area, clogging highways and completely closing secondary roads.

Broiler prices held about steady, but some weakness developed in the South and Southwest that may spread to the Northeast.

Eggs were up 1¢ doz. Higher prices are looked for next fall because of a smaller amount of birds put in. But a spokesman said more pullets are likely to be added later on which will bring the market into the same predicament it's in now.

Most ingredients continued to give ground during the week.

Southeast

Feed demand in the Southeast remains practically unchanged, with mills reporting their running time as about normal. From the general feeling, the only chance for the small operators to make any profits in the poultry business is to have some form of complete integration where the profitable operations will offset those of the losing operations. The big feed mills already have their other lines of feeds and products to fall back on. The ones who seem to be worrying are the feed mills with no other sideline operations.

The Southeast continues to increase its placement of broilers each week and many believe we may be heading in the same direction as last year for lower markets due to increased production.

Southern broiler prices last week continued about steady. Demand was quiet and about in line with supplies. Prices ranged from 17¢ to 18¢ lb. at the farms.

With good supplies of corn and less demand, prices dropped 3¢ bu. this week, making the delivered price range $1.35@1.37 bu.

Colder weather and heavy snows in the Mississippi Valley have created a fairly good demand for cottonseed meal, with prices increasing $1@1.50 ton. Soya prices remain unchanged.

Many citrus processors have withdrawn from the market and sales have been reported as being made this week at $35 ton for citrus pulp, f.o.b., producing plants, making the price range now $32.50@35. Demand is still good and movement is about equal to production.

Central States

In the formula feed trade, this is one of those weeks when a carbon copy of the preceding week's story would apply. Sales volume is little if any different than it has been since the turn of the year.

The projection to the end of the month indicates that the amount of business being done so far in 1960 continues to run about 15% or thereabouts below that of the corresponding period last year.

Much disappointment continues to be expressed due to the fact that the

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Serpasil Petition Is Filed with FDA

SUMMIT, N.J.—CIBA Pharmaceutical Products, Inc., has filed a petition with the Food and Drug Administration covering tolerances for a stress-ameliorating agent, Serpasil (reserpine premix, CIBA) used in chicken and turkey feed.

The petition, filed under the provision of the Food Additives Amendment of the Federal Food, Drug and Cosmetic Act, proposes the issuance of a regulation to establish the following tolerances for reserpine in chickens and turkeys: 2 parts per million in chicken feed for laying hens, to improve productive performances under stressful conditions; 1 part per million in chicken feed for broilers, to improve production performance under stressful environmental conditions; 1 part per million in turkey feeds for the treatment of outbreaks of aortic rupture; 0.2 part per million in turkey feed to aid in the prevention and control of aortic rupture; and a tolerance of zero for reserpine in eggs and in edible portions of chickens and turkeys that have received feed containing reserpine at this level and for the uses outlined in the petition.

CIBA intends to make its Serpasil premix for chickens and turkeys available as soon as FDA clearance is granted. However, feed manufacturers are still required to file a new drug application for the use of the premix in their feeds with FDA before the new additive may be sold. Forms for this purpose are available from CIBA. A company spokesman said that CIBA's petition is the 64th to be filed with FDA by food additive manufacturers under the terms of the new food additives amendment which becomes effective March 6.

Pennsylvania Explosion Kills Plant Employee

LANCASTER, PA.—Stanley Glick, 23, Washington Borough, was killed in an explosion at the Miller & Bushong feed manufacturing plant at Rohrerstown, four miles west of here.

The explosion came as Mr. Glick removed a manhole cover from the top of a tank, 60 ft. wide and 30 ft. high, used to store animal fat. The 18-in. manhole cover fractured his skull, according to Dr. Hiram L. Weist, East Petersburg deputy coroner.

He said the blast threw Mr. Glick onto the roof of the plant, and from there he tumbled off onto the top of a freight car, about 30 ft. from the tank.

Robert P. Graybill, plant manager, said the cause of the explosion had not been determined.

Lamb Feeders Day Set at Kansas State

MANHATTAN, KANSAS — Lamb feeding tests at the Garden City branch experiment station will be reviewed there March 4 at the 26th annual Lamb Feeders Day sponsored by Kansas State University.

During the 1959-60 experiments, lambs were fed 11 different rations, according to Carl Menzies, Kansas State University animal husbandman, who has charge of sheep investigations for the Kansas Agricultural Experiment Station.

Rations fed included the standard ration of sorghum silage, alfalfa hay and sorghum grain alone and in combination with a a number of other feeds and additives, he said. Among these were stilbestrol implants, cottonseed meal, Oleandomycin, corn silage, grain and wheat pasture.

A question and answer session and inspection of the lambs will follow discussions of the feeding experiments by Mr. Menzies and A. B. Erhart, superintendent of the Garden City station.

TEAMSTERS TO OPEN UNION TO POULTRYMEN

★

ELIZABETH, N.J.—James R. Hoffa has announced that he will start an organizing drive March 8 to open his Teamsters Union to poultry farmers in New Jersey.

It was reported that representatives of more than 1,000 south Jersey egg producers requested Mr. Hoffa open his union to them.

Egg prices have been at their lowest levels in this area since the recession last spring.

More than 1,000 New Jersey egg producers were forced out of business in 1959, according to the state poultry council.

Judgments Against L. A. Chemell Given

GAINESVILLE, GA. — The Pillsbury Co. and Ralston Purina Co. have won judgment by default rulings against L. A. Chemell of the bankrupt Chemell poultry operations.

U.S. district court made the same ruling in two suits on contract cases. A total of $229,170.62 was involved in the Pillsbury Co. case and $943,131.20 in the Ralston Purina Co. action.

The claims were filed against Mr. Chemell as an individual and not against the Chemell firm. Mr. Chemell offered no defense against either action.

There has been action by claimants to force Mr. Chemell into bankruptcy as an individual. Mr. Chemell claims that he can not be forced into bankruptcy. He says that since he operates a breeder farm, he is exempt from the involuntary bankruptcy provision of the law as a farmer.

Claimants maintain, however, that he does not qualify as a farmer, since he was chairman of the board of Chemell.

MFMA Officer Cited

KANSAS CITY—Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., was honored by the Missouri Veterinary Medical Assn. during its annual convention here Feb. 22-23. Mr. Larson was given an appreciation certificate for his part in organizing and sponsoring the Midwest Veterinary-Nutrition conferences the past two years.

Egg Set About Same as Year Ago

SALISBURY, MD. — For three weeks in a row, the nation's egg set has been running at about the same number as a year ago.

Last week, for 22 reporting states, the total number of eggs set was 48,575,000. This was 1% above the previous week but 2% below the corresponding week a year ago. Settings were up from the previous week in half of the 22 states. The increase reported for Alabama more than offset decreases in 11 states. Other states showing sizeable increases included Washington, Texas and Pennsylvania.

Broiler chick placements in the 22 states totaled 34,583,000 last week. This was slightly above the previous week and 3% above the corresponding week a year ago. Increases were reported for 11 states. The largest increases occurred in Alabama and Virginia. States for which large decreases were reported included Georgia, Maryland and Washington.

Firm Starts Making Bulk Body Equipment

DES MOINES, IOWA—Production of bulk body equipment for feed and fertilizers has been started by New Way Manufacturing Co. on completion of its new plant here. The newly organized firm will also handle feed milling equipment, according to Norman R. Melos, president.

C. W. Brown, formerly sales manager of Iowa Portable Mill Co., has been named sales manager of New Way.

Mr. Melos recently sold his Melos Manufacturing Co. business to his brothers, Earl and Stanley Melos, makers of portable feed grinders and mixers.

Delmarva Broiler Demand Increases

SALISBURY, MD. — Demand for broilers in Delmarva increased slightly last week. The average price paid per pound at the farm was 18.18¢, compared with 18.05¢ a week earlier.

Last week's marketings totaled 3,371,000. This was slightly below the previous week but 11% above the corresponding week of 1959. A year ago the price was 18.66¢.

Delmarva producers started 4,024,000 chicks during the week. This was 3% below the previous week but 6% above the corresponding week of last year.

MIDWEST OFFICERS—These are the new Midwest Feed Manufacturers Assn. officers elected at the group's recent convention in Kansas City (left to right): Charles W. Harris, Burrus Feed Mills, Fort Worth, treasurer; Harold E. Fouts, G. E. Conkey Co., Nebraska City, Neb., secretary; Fred K. Darragh, the Darragh Co., Little Rock, Ark., president; Lloyd S. Larson, executive vice president; Larry Alley, Pay Way Feed Mills, Inc., Kansas City, vice president.

USDA Starts Bid Basis Corn Sale

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Inauguration of a limited program for sale of government stocks of corn on a bid basis —terms to be announced later—for experimental use of these stocks of corn for industrial uses excluding beverage purposes, was announced this week by the U.S. Department of Agriculture.

This program means that Commodity Credit Corp. stocks of corn stated to be in limited amounts will be available at less than the statutory resale price of not less than 105% of the price support, plus reasonable carrying charges.

Offers are to be accepted from distillers licensed under the Internal Alcohol Control Act who have facilities for the production of ethanol and acetone, butanol and ethanol alcohol.

Corn from CCC storage points to be selected will be made available on a delivered basis, f.o.b. at the purchaser's plant.

A factor involved in acceptance of bids will be transportation cost from CCC storage points involved to the distiller's facility.

USDA makes another significant innovation in that the purchasers of CCC corn for this experimental program will be required to maintain adequate cost data on the processing of the corn and handling the entire program. This information is to be made available to CCC for program purposes.

Most significantly, USDA has adopted a renegotiation aspect in the program. USDA says it will require renegotiation of contracts if the cost data indicates excessive profits.

Details of the handling of the bid basis program are now being worked out at USDA, and sometime later next week, they will be mailed to the internal revenue list of licensed distillers and to others who may wish to participate if they request information. Requests should be made to the procurement and sales division, grain division, Commodity Stabilization Service, U.S. Department of Agriculture, Washington.

There is no reliable estimate of the quantity of corn which may move on the bid basis. Consequently, there is no reliable estimate of the quantity of distillers by-products which will result.

Dr. Salsbury's Poultry Short Courses Set

CHARLES CITY, IOWA — Four four-day poultry short courses, designed to help poultrymen improve their knowledge of disease prevention and control, have been set by Dr. Salsbury's Laboratories for March and April.

Chicken classes have been scheduled March 7-11, March 28-April 1, April 11-15 and April 18-22.

The four-day course includes education in poultry diseases, management and sanitation, as well as the use of drugs in treating and preventing diseases. The class includes a wide range of subjects. A staff of poultry specialists will instruct. The enrollment is controlled to "allow most intensive and personalized attention."

Each session starts at 1 p.m. Monday. Registration is at the education center Monday morning between 8-12. While the schedule is full during the four days of study, classes are completed at noon Friday.

Tuition fee is $15 covering the cost of material used in the course. Enrollments are limited, and applications are accepted in the order in which they are received.

Further information concerning the course may be obtained by contacting Dr. Salsbury's Laboratories.

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Pacific N. W. Feed Men Hear Talks on Pelleting Operations

By ROGER BERGLUND
Feedstuffs Managing Editor

YAKIMA, WASH.—The importance of pelleting in today's feed mill operation was reflected in the extensive discussions of this subject at the annual Pacific Northwest Feed Mill Production School.

Attention at the two-day school here Feb. 10-11 was devoted almost entirely to the various aspects of pelleting—preparation of ingredients for pelleting, the pelleting operation itself and processing and handling following the pellet mill. Both roughage and conventional pellets came in for discussion.

The school, sponsored by the Washington State Feed Assn., drew some 150 feed men from Canada, Washington, Oregon, California, Idaho, Montana and Minnesota.

The information was presented in both talks and small discussion group sessions during which the feed men exchanged ideas. (Points and conclusions brought out in the discussion groups will be summarized in Feedstuffs later.)

Representatives of machinery companies, design and engineering firms and feed manufacturers presented the talks and led the discussions.

The school speakers offered suggestions on these topics:

- Processing of feeds before pelleting.
- Pelleting as related to alfalfa and roughage feeds.
- Factors involved in control of fines in handling and storage.
- Operating a pellet mill.
- Pellet cooling, crumbling and scalping.
- Bulk delivery of pelleted feed.

Summaries of these talks follow:

PROCESSING OF FEEDS BEFORE PELLETING—This subject was handled by L. E. (Tommy) Thompson of Reid-Strutt, Inc., Portland, after it developed that Marion J. Kloster of General Mills, Inc., Minneapolis, could not be present.

The most important factor in assuring good pellets, said Mr. Thompson, is formulation. If one is having trouble in pelleting, he should look first at the formula. Any feed can be pelleted if one assures a few binders and lubricants in the formula.

Texture of the feed going to the pellet mill can have a tremendous effect on quality and quantity of pellets, Mr. Thompson said. He stressed the value of a fine grind and a uniform grind. Large pieces of fiber or large particles of corn, for example, can hurt results. Fine grinding exposes more material to the moisture and makes for better absorption.

Uniformity of the feed mix also was mentioned by Mr. Thompson. At present, he said, many plants are not producing a really uniform mix. He said that for one thing, it is advisable to use a carrier with microingredients. There will not be uniformity of mix, he went on, if there is a wide variation in particle size. Also, static electricity, density of materials and time at which microingredients are put in are factors. Bin design has a great effect on quality of the mix going to the pellet mill. In connection with moisture addition ahead of pelleting, he said it should be noted that water may affect some microingredients.

Regarding the addition of other liquids, Mr. Thompson said that it is desirable to add fat early in the system so that there is a lag before pelleting. He advised using a mixer designed for liquid addition in order to assure good dispersion and absorption, and the feed should have a good absorption quality. As for molasses, he said he feels it advisable to add this ingredient "as far ahead of the pellet mill as possible so that it will work into the feed." He observed that small amounts of molasses, 2-4%, help in formation of a good pellet since the sugar acts as a binder.

Preheating of feed before it goes in the pellet mill is still mostly speculative but is being given more attention, Mr. Thompson said. It would be beneficial to apply heat just before pelleting to assist in bringing up the temperature of the material. There would be more time for the feed to absorb heat, and breakdown of sugar and starches would be facilitated.

PELLETING AS RELATED TO ALFALFA AND ROUGHAGE FEEDS—Pelleting of roughages or hay was described by an agricultural engineer as a promising infant industry that has experienced phenomenal growth in the Northwest. W. E. Salmon, agricultural development engineer for the Pacific Power & Light Co., said this rapid growth has exceeded research on the subject. When research convinces enough feeders that pelleted roughage feeds are beneficial, he added, the market for pellets will grow still further.

Mr. Salmon mentioned that the state of Washington produced 1,633,000 tons of hay in 1959. If all of this were pelleted at a cost of $10 ton, it would result in more than $16 million of additional feed business.

At present, he said, Washington has seven operating roughage pellet mills. If these seven mills were operated 20 hours a day, six days a week and could produce pellets at a rate of 4 tons per hour, and if they pelleted 100% hay, they would be able to pellet only about 10% of Washington's hay crop. With the addition of grains and other feedstuffs to the usual roughage pellet, it can be seen that the present mills provide only a small portion of the capacity needed to pellet Washington's roughage supply.

Mr. Salmon outlined some of the

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PRODUCTION SCHOOL—Some of the participants in the program at the recent Pacific Northwest Feed Mill Production School are pictured here. In the first photo, left to right, are Rex Wagner, Sprout, Waldron & Co., Inc., Arcadia, Cal.; J. G. Wilson, manager of the Washington State Feed Assn., Seattle, and Paul J. Husting, California Pellet Mill Co., Crawfordsville, Ind. Mr. Wagner and Mr. Husting were speakers. In the second picture are Art Stegner, Butler Mfg. Co., Kansas City, a speaker, and Ed Stauffer, Reid-Strutt, Inc., Portland, the school chairman. The school was held Feb. 10-11 in Yakima Wash.

Need for Improved Management to Cut Condemnations Noted

KANSAS CITY—Need for improved poultry farm management practices to cut down the high poultry condemnation rate was stressed at an extension-industry joint meeting sponsored by the Institute of American Poultry Industries at its annual Fact Finding Conference here.

Many of the speakers placed the blame for the high condemnation losses on the flock owners.

R. E. Omohundro, animal disease eradication division of the U.S. Department of Agriculture, showed slides pointing out poor farm management practices. Illustrated were southern broiler houses where drafts, poor insulation and other careless conditions added to the danger of diseases which resulted in high condemnation losses.

J. Frank Gordy, University of Delaware extension poultryman, and Frank Wollney, field services director for IAPI, Chicago, pointed out the necessity of good management.

Mr. Gordy told how servicemen are urged to try to get better management practices carried out in his state. Short courses are being used to educate servicemen and others to the need of good management practices, he said.

"The most important need is for a closer working relationship between segments of the industry and for organizations in the industry to work together," Mr. Gordy said. "The man in management is most important, and there also is an urgent need for field studies on the condemnation problem."

Mr. Wollney noted that the annual industry loss through condemnations in processing plants amounts to $14 million and pointed out that condemnations have been increasing. He stressed the need for re-evaluation of management.

Dr. Roy E. Willie, who is in charge of the USDA inspection program, said USDA is striving to maintain uniform inspection services and that inspectors follow a standard code. He added that they do not "make their own rules as they go along."

USDA is looking into the possibility of salvaging the legs of condemned birds, Dr. Willie said.

Oilseed Meal Futures Irregular at Memphis

MEMPHIS, TENN.—Prices of oilseed meal futures were irregular on the Memphis Board of Trade this week.

In general, the market saw very slow cash trading in both soybean oil meal and cottonseed oil meal, with some indications of better formula feed business due.

This brought a fair volume of buying on the nearby oilseed meal market, which had reflected lower prices due to on-track oil meal developing in certain areas.

There was some spreading from the March option of both cottonseed oil meal and soybean oil meal. The March contract becomes current Feb. 29.

Memphis basis soybean oil meal closed Feb. 23 50¢@$1 ton lower than on Feb. 16. Unrestricted soybean oil meal was $1 lower to 25¢ higher. Bulk solvent cottonseed oil meal was $1 lower to $1.05 higher.

GMI Declares Dividend

MINNEAPOLIS—The board of directors of General Mills, Inc., has declared a quarterly dividend of $1.25 per share on 5% preferred stock payable April 1, 1960, to stockholders of record March 10, 1960.

This is the 82nd consecutive quarterly dividend on the firm's 5% preferred stock.

New Iowa Plant Now in Operation

MASON CITY, IOWA—Manufacture of some feeds has begun at the Farmers Elevator Service Co. plant here. The plant is nearing completion and an opening will be held later this spring, accordingto Vern Moore, assistant to management at Fort Dodge, Iowa.

A Hardy automatic 3-ton batching system is designed to draw a pre-set number of batches with up to 16 ingredients per batch, including the addition of liquids and other ingredients, Mr. Moore said.

The rated mixing capacity is 30 tons per hour. The plant is designed to produce both supplements and complete feed.

There are two 100 h.p. pellet machines, one of which is a combination machine which will produce either hard or high molasses pellets.

The plant includes 15,400 sq. ft. of warehouse storage on rail siding.

Grain receiving equipment has a capacity of 5,000 bu. per hour. Soft feed receiving equipment has a capacity of 60 tons per hour. This plant differs from many other feed plants, Mr. Moore notes, in that rail receiving and truck receiving occupy a common drive, "making possible a saving in machinery and manpower." The plant has a 50-ft. hydraulic truck dumper in the truck receiving drive.

There are three 10,000 gal. liquid storage tanks, 20 bulk ingredient bins, five grain storage bins and six premix bins.

Other equipment includes automatic bagging facilities, separate office building with 50-ton truck scale adjacent and 100 h.p. hammermill.

Federal Lamb Grading Rules Change March 1

WASHINGTON—Revised regulations of the U.S. Department of Agriculture lamb-grading program will go into effect March 1, according to USDA.

USDA changed the regulations "after considering requests and opinions of lamb producers, processors, consumers, farm organizations and other interested parties."

The new standards will tend to reduce the total amount of fat on choice and prime carcasses. Lamb graders under the changed rules will look for less fat inside and between the ribs and inside the carcass around flanks and other wasty areas.

To increase finish requirements on meaty parts of the carcass, the new rules call for a minimum amount of fat on the outside of choice and prime grades.

The revised regulations also will:

1. Ease quality factors—having to do with fat distribution and firmness of fat and lean. The easing will be about one-half grade in young choice and prime lamb carcasses. Quality standards on older prime lambs will drop a full grade and choice about two-thirds grade.

2. Emphasize conformation—or the general body build as it applies to meatiness and balance between different parts of the carcass. Under the new rules, a carcass rating high on quality alone will drop a grade if its conformation doesn't measure up to other factors.

The lamb-grading program deals only with carcass grade and quality and has nothing to do with the federal meat-inspection program, USDA notes. Government regulations for slaughterhouse inspection and examination of animals and carcasses for disease or other defects aren't changing.

Sheepmen and other interested persons can get copies of the revised lamb-grading regulations by writing the director, livestock division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25.

Poultry Exchange Ups Listing Charge

By Special Correspondent

GAINESVILLE, GA. — The latest development in the poultry auction picture to come into focus, as some open opposition has been noted from some processors, is an increase in the charge for listing birds on the Georgia Poultry Exchange here.

The increase from $1 to $1 50 per thousand birds, a fee paid by the sellers and not the buyers, will "tend to put the exchange on a firmer financial basis," exchange officials have indicated, "but will not work a hardship on the producers since the cost will amount to only about one seventh of one cent per bird."

Bill Walker, manager, said the fee had been $1 a thousand since the exchange opened early last year.

Dealer Grade

He also said a dealer grade will be listed for birds in some areas not covered by an exchange checker because some of the birds going to auction in Gainesville are located too far away to justify expense of sending a checker to that point.

In recent weeks, there has been some open opposition to the auction method of selling live birds, with one North Georgia plant closing down claiming they were operating without profit because they were obliged to buy broilers at the selling price on the auction but were selling on the quoted prices by the U.S. Department of Agriculture.

Producers have challenged these statements by pointing out that processors usually sell ready-to-cook broilers on USDA-quoted prices at terminal markets and that auction prices are for live birds on local or producing area markets.

20% of Georgia Production

Meanwhile, the exchange here continues to handle approximately 20% of the Georgia production, and there are some indications industry leaders are considering suggestions that USDA market reports be based only on bid and selling prices at all the poultry auctions.

Several years ago, USDA reported only auction prices at the exchange on the eastern shore, but these were discontinued when producers in that area claimed southeastern producers used those quotations to undersell Delmarva on national wholesale markets.

GMI Appoints Feed Unit Research Head

MINNEAPOLIS—Henry L. Witz has been appointed director of research for the feed division of General Mills, Inc., E. E. Woolley, general manager of the division, has announced.

H. L. Witz

Mr. Witz succeeds Dr. H. Ernest Bechtel, who resigned.

In his new position, Mr. Witz will direct all feed research activities at the Larro Research Farm which is located near Indianola, Iowa. He has been serving as both assistant director of research and director of products control for the feed division.

Mr. Witz joined General Mills in June of 1947 as a project supervisor at the original Larro Research Farm in Detroit, Mich. Upon his return from the Navy in 1952, Mr. Witz was named assistant director of research for the feed division.

Mr. Witz was graduated from Purdue University in 1943 with a B.S. degree. He returned to Purdue in 1946 and received a master's degree in nutrition the following year.

NEW POULTRY EXCHANGE MANAGER NAMED

GAINESVILLE, GA.—Bill Walker, former auctioneer, has been named manager of the Georgia Poultry Exchange. He succeeds Tom Hodge, who resigned to become general manager of Mar Jac Poultry Co., Gainesville.

Mr. Walker will continue to serve as auctioneer. He has been with the exchange since its organization a year ago.

Iowa Firm Announces 2 Bulk Body Models

MOUNT PLEASANT, IOWA—Two models of the Curley line of bulk feed truck bodies are now available, according to an announcement by Keith Farrier, sales manager of Curl Engineering and Manufacturing Corp., here.

One is for bulk feed only and has two compartments, while the other is for bulk and/or sack feed and has three compartments.

"No manual labor is needed during the loading, transporting or unloading operations of these truck bodies," Mr. Farrier says.

Curley line bodies have booms equipped with a positive turning mechanism that is hydraulically operated, he says. The entire unloading operation, including compartment floor slides, raising boom auger, can be accomplished from the cab running board by one man using the P.T.O. hydraulic controls located on the front of the truck body, he noted.

An auger runs the length of the body and delivers the feed by front discharge. The auger is reversible for unloading through an exit in the rear.

One, two or three separate types of bulk feed may be carried at one time. The compartments can be unloaded separately or together and are removable.

Standard capacities are six and seven tons. Complete information including distributor territories now open is available from the company.

Another Offer to Buy Banned Poultry Made

WASHINGTON—The U.S. Department of Agriculture has announced still another offer to purchase additional frozen ready-to-cook poultry which had been treated with diethylstilbestrol.

The offer, subject to vendors' acceptance, is for purchase of some 2,839,720 lb. and brings the total which USDA has offered to buy to 8,708,300 lb. The purchases are being made in accordance with the purchase program which was announced Dec. 11, 1959.

USDA is mailing contracts to the persons or firms who offered the poultry. The contracts will become valid when they are signed and returned to the Poultry Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

Prices of the offers in this announcement ranged from 30.21@45¢ lb. The average price offered was 43.51¢ lb. Factors which account for the wide price range include variation in prices of live poultry, date of processing, processing costs, weights, quality, services performed and storage costs.

Subsequent announcements of offers to purchase will be made, USDA officials said, "As soon as additional documentary evidence is received from firms or persons who complied with the Jan. 31 closing date of the program."

ALBERT T. BERG DIES

ELLENDALE, ARIZ. — Albert T. Berg, 75, owner of a feed store here, died at Phoenix Feb. 19 while visiting his son.

1959 Calf Crop 2% Larger; Reverses 4-Year Down Trend

WASHINGTON — The 1959 calf crop was 2% larger than the 1958 crop, according to the U.S. Department of Agriculture's Crop Reporting Board. The increase shown for 1959 reversed the down trend of the previous four years.

The 1959 calf crop of 41,046,000 head was 4% below the record high 1954 crop of 42,601,000 calves, but was 7% above the 1948-57 average. The 1958 crop totaled 40,409,000 head. All regions except the north Atlantic and east north central showed larger calf crops in 1959.

More Cows, Heifers

USDA said the larger calf crop during the past year was due primarily to the larger number of cows and heifers on farms. The number of cows and heifers two years old and older Jan. 1, 1959, amounted to 47,001,000 head, compared with 46,520,000 head Jan. 1 a year earlier, and by Jan. 1, 1960, had increased to 48,594,000 head.

The number of calves born in 1959, expressed as a percent of the cows and heifers two years old and older Jan. 1, 1959, at 87% was the same as 1958. This percentage is not strictly a calving rate, since the Jan. 1 inventory of cows and heifers two years old and older does not include all heifers which give birth to calves during the year, and includes some cows that die or are slaughtered before calving. This percentage is calculated to show trend in productivity over a period of time. It may fluctuate from year to year due to variation in cow slaughter and trends in breeding herd replacement, according to USDA.

Regional Figures

The 1959 calf crop totaled 16,795,000 head in the north central states, up 1% from 1958 and 2% larger than the 10-year average. The east north central states had a 2% smaller calf crop while the west north central states with nearly two thirds of the north central total, had a 2% larger calf crop.

The 1959 calf crop for the north central region was 91% of the cows and heifers two years old and older the first of the year, the same as in 1958.

In the south central states the 1959 calf crop at 10,847,000 head exceeded a year earlier by 3%, and in the south Atlantic states the calf crop totaled 3,320,000 head, 1% larger than in 1958. The calf crop as a percent of cows and heifers two years old and older was 85% in the south central states, and in the south Atlantic states, 79%—both up 1 point from 1958.

The calf crop in the 11 western states at 7,191,000 head, was 3% larger than in 1958. All states in this region showed larger calf crops in 1959. The calf crop as a percent of cows two years old and older was 88%, unchanged from a year earlier.

The calf crop of 2,893,000 head for 1959 in the north Atlantic states compares with 2,910,000 head a year earlier. The calf crop was 85% of cows and heifers two years old and older, up 1 point from a year earlier.

Georgia Firm Leases Ex-Chemell Plant

TIFTON, GA.—Dixie Chick, Inc., a Gainesville, Ga., hatchery firm, began operating here recently in a plant formerly used by the Chemell Hatcheries.

Chemell closed in Tifton Nov. 6 after becoming involved in bankruptcy proceedings.

Pope Barfield, who was in sales and service with Chemell Hatcheries here, is the acting manager for the new Dixie Chick plant, which he said would be called Tift County Hatcheries. He said the Dixie firm had leased the building and equipment—including eight setting and eight hatching machines—which had been formerly leased by Chemell.

The firm started operating to turn out 86,000 chicks a week, but will probably step up production until 120 000 is reached, according to Mr. Barfield.

Jack Willis, plant manager with the hatchery operated by Chemell, is plant manager for the new operation, it was announced.

Mr. Barfield said he expects that chicks will be sold mostly to feed companies in this area.

Turkey and Chicken Pullorum Tests Off

WASHINGTON—Both the number of turkeys and the number of chickens for supplying broiler hatching eggs tested for pullorum during January were down by 11% from the same month a year ago.

Turkeys tested during January for pullorum disease totaled 501,435. The number of chickens for supplying broiler hatching eggs tested for pullorum disease during January totaled 2,316,187. The number of heavy white breed turkeys tested totaled 144,613, compared with 152.756 the previous year—a decrease of 5%. The number of other heavy breeds tested totaled 309,103—down 11% from January, 1959. The number of light breeds tested totaled 47,719—a drop of 29% from January of last year.

During the months of July, 1959, through January, 1960, testings of heavy breed turkeys were 6% less than during the same months a year earlier. Heavy white breeds tested were up 5%, but testings of other heavy breeds were down 9%. The number of light breed turkeys tested was 43% less than during July, 1958, through January, 1959.

Testings of chickens for supplying broiler hatching eggs July, 1959, through January, 1960, totaled 16,194,012—down 7% from a year earlier.

A drop of 24% was experienced in testings during January from the same month the previous year for supplying eggs for egg-type chicks. A total of 1,257,826 chickens of this type were tested during January. The testings of egg-type birds during the months of July, 1959, through January, 1960, totaled 9,647,616, down 14% from the corresponding months a year earlier.

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Statement on Additives Amendment 'Deadline' Issued by Abbott Labs

NORTH CHICAGO, ILL.—Further comments on the real significance of the so-called "deadline" date of March 6 for the food additives amendment to the food and drug law are contained in a statement which has been sent to feed manufacturers by the chemical marketing division of Abbott Laboratories, North Chicago. (An explanation of this "deadline" by the Food & Drug Administration appeared in Feedstuffs Feb. 20.)

Here is the text of the Abbott statement:

"What is the March 6 deadline—which you may or may not have read about in trade publications the last few weeks?

"This simply refers to a clause in the food additives amendment with respect to prior commercial use of a 'food additive.' Does this March 6 'deadline' have any effect upon arsanilic acid (Pro-Gen), sodium arsanilate anhydrous (Pro-Gen Sodium) or menadione sodium bisulfite (Klotogen F)? We confidently believe that as to those applications which, because of long commercial use, are admittedly generally recognized as safe, the answer is no.

"This March 6 date has no effect whatsoever upon products which are exempt from the food additives amendment. If an additive to animal feed falls within one of the following categories, it is automatically exempt from the food additives amendment: (a) Any substance which is generally recognized to be safe under the conditions of its intended use, and (b) any substance which is used in accordance with a prior sanction or approval. Such an additive is excluded from the term 'food additive.' No action by the Food & Drug Administration is required to exempt the additive from the law.

"Lists Not Complete"

"It is true the FDA has published from time to time lists of some compounds which it considers to be generally recognized as safe for their intended use and are exempt from the food additive amendment. As the FDA has admitted, these lists are not complete. A substance which falls within one of these statutory exclusions is exempt whether or not it is included in a published FDA list. There are many products which have not been published in an FDA list which are exempt. Arsanilic acid, sodium arsanilate and menadione sodium bisulfite fall into this group. These products have long been considered to be generally recognized as safe.

"It was agreed in 1953 between

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Several Factors Edge Egg Prices Upward

Egg prices appeared to be edging upward this week, primarily because government support buying of dried eggs has taken a large amount of fresh eggs off the market, production seems to be down in some areas and demand apparently has improved in view of the approaching Lenten season.

At Chicago, for instance, prices of top quality cash eggs were 4@5¢ higher last week than they were nearly a month earlier.

At mid-week, Chicago markets were paying 29¢ doz. for large white and mixed color extras. At Atlanta the price range for large eggs was 28@31¢. The wholesale selling price for large eggs in New York was near 34¢. Demand was reported good in Iowa, where buyers who buy all grades and sizes at one price paid farmers 20@22¢.

Pfizer Reports Record High Sales, Earnings

NEW YORK — Worldwide sales of Chas. Pfizer & Co., Inc., were at a record level in 1959, showing a 14% increase over the previous year and passing the quarter-billion dollar mark for the first time. Net earnings were about 4% above those for 1958, also registering a new high.

According to a preliminary report by the company, sales of the 111-year-old drug and chemical company were $253,673,000, against $222,726,000 in 1958. Earnings in 1959 amounted to $24,863,000, compared with $23,965,000 the year before. They were equivalent to $1.51 per share of common stock on 16,368,000 shares outstanding against $1.47 in 1958 on 16,116,000 shares outstanding, adjusted for the 3-for-1 split April 20, 1959.

Fourth quarter sales in 1959 totaled $68,001,000, compared with $62,331,000 in the same period in the previous year. Earnings increased to $7,622,000 from $6,737,000. Per share earnings were 46¢, compared with 41¢ in the last three months of 1958.

John E. McKeen, president, said that non-government sales of ethical drugs gained in the domestic market, as did the volume of bulk chemicals and agricultural products.

He said a new synthetic penicillin called Maxipen will be marketed within the next few weeks by the J. B. Roerig & Co. division.

Capital expenditures of $30 million were reported in 1959. These included expansion programs in U.S. locations and in a dozen other countries. Pharmaceutical production and packaging plants began operations in Colombia and Pakistan and another is starting up in Australia. Refining and fermentation plants, nearing completion in Argentina and Brazil, also will reach full capacity this year.

FDA HEAD COMMENTS ON EFFECTIVE DATE

"I believe that March 5, 1960, will end and March 6, 1960, will dawn just about like other days."

This is what George P. Larrick, commissioner of food and drugs, Food & Drug Administration, has said about the time when the food additives amendment becomes fully effective.

"The American people will continue to get adequate food without wild alarms, without mass seizures by the government of food additives that hadn't been cleared," he said. "In short, we expect the world to continue to operate about the same way immediately after this law becomes fully effective as it does now."

He stated also in a recent talk, "A firm still has the right to decide for itself whether its product is subject to the food additives amendment, and if it thinks it is not, we (FDA) have the obligation of proving in court that it is before we can maintain actions against the product or the firm."

(Editor's note: Under the FDA interpretation of the Delaney clause of the food additives amendment, there have been and are certain restrictions in regard to supplemental new drug applications where estrogens or arsenicals are involved in the formulas, but it is understood that previously cleared uses and certain new uses will not be affected in cases of prior sanction or recognition of safety.

(Thus, it can be said that the current situation will not change just because of the March 6 effective date of the food additives amendment. While present restrictions will continue unless a change is made in the law or regulations, there will not be additions to these particular restrictions.)

Texas Tech Plans Grain Conference

LUBBOCK, TEXAS—The sixth annual Grain Drying and Storage Conference will be held March 2-3 at the Student Union of the Texas Tech campus, according to Ira L. Williams, head, department of agricultural engineering, Texas Tech.

Topics to be discussed March 2 will include: "Failures in Grain Storage Facilities," "Concrete in the Construction of Grain Storages," "What We Know and Don't Know About Grain Drying," "Holding Wet Corn," "Marketing Feed Grains in Greece" and "After Grain Storage — Then What?" Seminars will be held on grain drying, aeration and storage structures.

Topics March 3 will include: "Domestic Merchandising," "Grain Producers as Modern Marco Polos," "Fire Prevention in Grain Driers and Elevators," "Making a Stable and Dependable Grain Industry," "Texas Grain and Warehousing" and "Warehousemen's Relations with the Commodity Credit Corporation—1960." Seminars will be held on merchandising, fumigation and equipment.

Sees No Cattle Price Upturn This Spring

EAST LANSING, MICH.—Fed cattle prices probably won't make any upward recovery in late winter or early spring this year, but they should hold firm into the late summer, according to John Ferris, agricultural economist at Michigan State University.

He reports that marketings of fed cattle will continue heavy this year but marketings will be distributed more evenly during the first three quarters than in 1958 and 1959.

As a result, Mr. Ferris expects average prices on choice steers to move between $24 and $26 cwt. during the first nine months of this year. Utility cow prices should reach a seasonal peak near $17 in the spring, he says. Both these forecasts are made on the basis of no extensive drouth conditions occurring in the plains states.

Following a leveling-off period in mid-year, fed cattle prices will likely resume a downward trend late in 1960 and into 1961, he says.

Report on Soybean Cake, Meal Issued

WASHINGTON—Soybean cake and meal production was down 50,000 short tons in December from the previous month, according to the U.S. Department of Commerce.

Production totaled 776,800 short tons in December as compared with 826,800 in November. Stocks at the end of the month were down, totaling 63,300 short tons as against 76,500 in November. Shipments and transfers totaled 790,000 in December and 822,900 in November.

Production of soybean hull meal declined slightly from November in December. The December total was 11,600 short tons, comparing with 11,800 tons in November. Shipments and transfers were down also, totaling 11,500 short tons as against 13,300 short tons in November. Stocks were up slightly, totaling 2,800 short tons in December as against 100 less short tons at the end of November.

Louisiana Blackstrap Production Up in 1959

WASHINGTON—Actual Louisiana blackstrap production in 1959 season amounted to 28,258,331 gal., converted to 31,846,438 gal. at 80° Brix, according to a report by the U.S. Department of Agriculture's Agricultural Stabilization and Conservation Service.

This compares with an actual production in 1958 of 27,885,280 gal., converted to 31,067,816 gal. at 80° Brix.

FDA Explains Steps In Clearing Enzymes For Animal Feeding

WASHINGTON — Some explanation of how enzymes may be cleared and used in feeds was provided this week by Food and Drug Administration officials.

It is expected that certain enzyme products will be generally recognized as safe for use in the food industry and petitions to FDA under the food additives amendment will not be required.

However, according to FDA officials, special procedures will be required for animal feed use of the enzymes.

Even though a specific enzyme has official sanction or recognition of safety for use in the preparation or processing of foods—say, for instance, one used in tenderizing meat or one used in baking bread—the producer of the product must go through the new drug application procedure before it can be used in feeding, officials indicated.

In this connection, it was noted that evidence of efficacy is important, too.

FDA is understood to be regarding certain enzyme products as recognized as safe for use in food preparation or processing, and these products then are said not to be additives within the meaning of the food additives amendment.

But, said FDA officials, although an enzyme is permitted to have specific use in food products, it must have specific clearance to be used as a feed supplement.

Another point, said FDA, is that consideration must be given to any possibility of an undesirable reaction in the feed to which a product is added.

Also, in connection with enzyme use, is the question of whether the bacteria used to produce the enzyme have been eliminated completely before the enzyme is used for its particular purpose. "If the bacteria are not taken out, we don't think we could consider the enzyme safe," an FDA official said.

It is understood that FDA considers enzymes drugs because they can cause physiological changes.

According to FDA, before an enzyme preparation can be marketed for use in feeding animals, the agency must have this information:

1. The strain of bacteria used to produce the enzyme.
2. The substrate or food on which the bacteria live.
3. "The time, the temperatures and the pH" of the "mash" (both the bacteria and the food on which it lives).
4. The physical layout of the plant in which the enzyme is to be produced; how the enzyme would be produced; the actual facilities to be used in producing the enzyme, and the control procedures to be employed in production.
5. The specific enzymes to be found in the preparation and the potency of these enzymes.
6. How and under what conditions the enyme preparation can be used beneficially.

Livestock Prices Move In Favorable Direction

CHICAGO — Prices for steers, lambs and hogs moved in a favorable direction this week, primarily because of light receipts and a strong fresh meat market.

Top-graded steers advanced to the highest price since July—$30.50 cwt., then leveled off. Lamb prices moved upward to a $22 high, the best in four months. At markets where receipts were off because of adverse weather blocking highways, hog prices showed improvement. The Feb. 26 high at Chicago was $14.75.

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Nutrition, Integration, Automation Given Attention at Utah Conference

By DR. LAWRENCE MORRIS
Brigham Young University

LOGAN, UTAH — Discussions on automation, integration, nutrition, economics and products of animal agriculture were discussed by researchers and livestock producers at the recent 11th Utah Feed and Nutrition Conference here.

Dr. M. E. Ensminger, Washington State University, opened the program by discussing the impact of integration on the livestock industry. He noted that integration is not new, nor peculiar to animal agriculture. In fact, he said, most vegetables produced for canning are contracted, as are sugar beets and most of our fruit crops. The livestock industry is just now feeling its way into various types of the integrated program, with possibly hogs leading the way.

Dr. Ensminger felt that integration has spread and will continue to spread because "it has proven profitable and has provided both the producer and handler with a product of known value."

All this has been brought about by pressure of consumers for uniformity, regularity and quality of products at an economical price. This pressure has in turn been passed to the processor and eventually to the producer. In the opinion of Dr. Ensminger, integration is here to stay and it will expand into the areas where mass production can be achieved.

The feed manufacturer and dealer will be directly affected by integration because: (1) He will become an active partner either as the integrator or a part of the over-all program; (2) with production units larger, greater emphasis must be placed on disease and parasite control rather than cure; (3) more highly trained scientists and technologists will be needed; (4) marketing specifications will fit closer to the demand of the American housewife, and (5) problems of financing will become greater.

Automation

Dr. Ensminger pointed out that automation has lagged far behind in the production of livestock, as compared to other agricultural activities. Field crop mechanization has increased 300% during the last 20 years, while mechanization in livestock production has increased only 20% during the same period. The turkey, broiler and egg industries are fast becoming mechanized, but mechanization in the larger animals has been and is lagging. The feeding, cleaning and watering operations especially lend themselves to mechanization.

Dr. Ensminger predicted that more automation and technological changes will come during the next 10 years than in the past generation.

SPECIFICATION PRODUCTION AND BUYING OF LIVESTOCK — During a panel discussion moderated by Dr. James A. Bennett, Utah State University, it was emphasized that animal agriculture is changing as is the buying habits of the American housewife. These habits in turn are influencing the requirements of the wholesaler and retailer. To meet this revolution in the American kitchen, the market men have turned to wholesalers and meat packers with these demands.

It was reported that LeRoy Smith of Phoenix, Ariz., a large beef feed lot operator, has geared his feeding and production operations to these demands by having (1) a uniform grade and quality of feed lot cattle, (2) beef that meets specifications available twelve months of the year, (3) a constant and uniform grade of feeder cattle available from breeders and suppliers, and (4) a balanced feeding program designed for more efficient gains.

Specification buying has also affected the packer and the retailer. Dr. Bennett said they demand a certain type of beef (right now U.S. choice) with carcass weights of 450-550 lb. for heifers and 500-650 lb. for steers. Lamb carcasses should weigh 45-57 lb. Heavier carcasses are resisted by consumers.

Specification buying demands: (1) A highly uniform product, (2) a steady day-to-day supply, (3) a conveniently packaged product, (4) a consumer-accepted product week after week and (5) a competitively priced product to secure volume.

"The challenge of specification buying to the livestock producer is to become familiar with the forces that are reshaping livestock marketing and to chart their future therefrom," Dr. Bennett observed. "There are opportunities ahead for those who make wise and timely changes in a changing world with a 'tomorrow mind' instead of a 'yesterday mind'."

PRODUCTS OF ANIMAL AGRICULTURE—Carl Neumann, general manager, National Livestock & Meat Board, pointed out that the population explosion by 1975 will require 27% more beef, 46% more pork, 12% more lamb, 35% more chicken and broiler meat, 14% more turkey and subsequently more milk and dairy products. "This increased consumption will depend on the ability of animal agriculture to produce at a price and of a quality that the consumer can and will buy," he said.

"In addition to producing the type of animal products the public will consume, we must keep them properly informed as to its nutritional value. The recent scare on cholesterol and animal fats as they affect blood cholesterol and heart trouble are examples of what can happen. Recent research indicates very definitely and conclusively that animal fats are not the culprit causing this trouble."

RESTRICTED FEEDING OF POULTRY—The cost squeeze on the poultry producer has caused him to study and reevaluate many of his production practices. Pullet replacement costs are second only to feed costs and in studies at Texas A&M College the problem of restricted feeding has been given careful study, said Dr. John Quisenberry, head of the Texas A&M poultry department. He noted that researchers at the Texas university had approached this problem by two methods: (1) Restriction of daily food intake and (2) high fiber diets.

He said by limiting daily feed intake or by full feeding a 15-20% fiber growing diet: (1) Body weight may be reduced, (2) sexual maturity delayed and (3) the percentage of

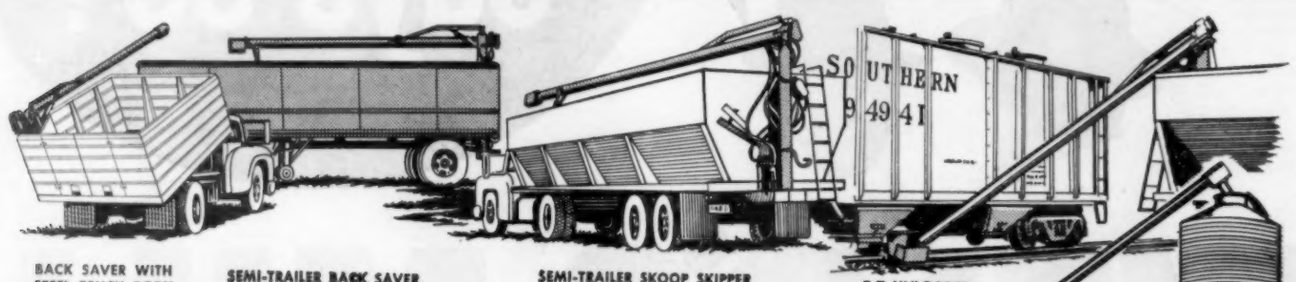
(Turn to page 14)

UTAH FEED MEN ELECT NEW PRESIDENT

LOGAN, UTAH—Ray L. Hermansen, Gunnison, was elected president of the Utah Feed Manufacturers & Dealers Assn. at the conclusion of a two-day convention here.

Lawrence Zaugg was named vice president and Wayne Farrell, Bob Morris and Alan Bader, all of Ogden, were named board members, along with Lawrence Morris, Provo, and Stuart Richards, Trenton.

Dr. Lawrence Morris, Brigham Young University, is secretary-treasurer, and Dr. J. O. Anderson, Utah State University, is assistant secretary-treasurer.



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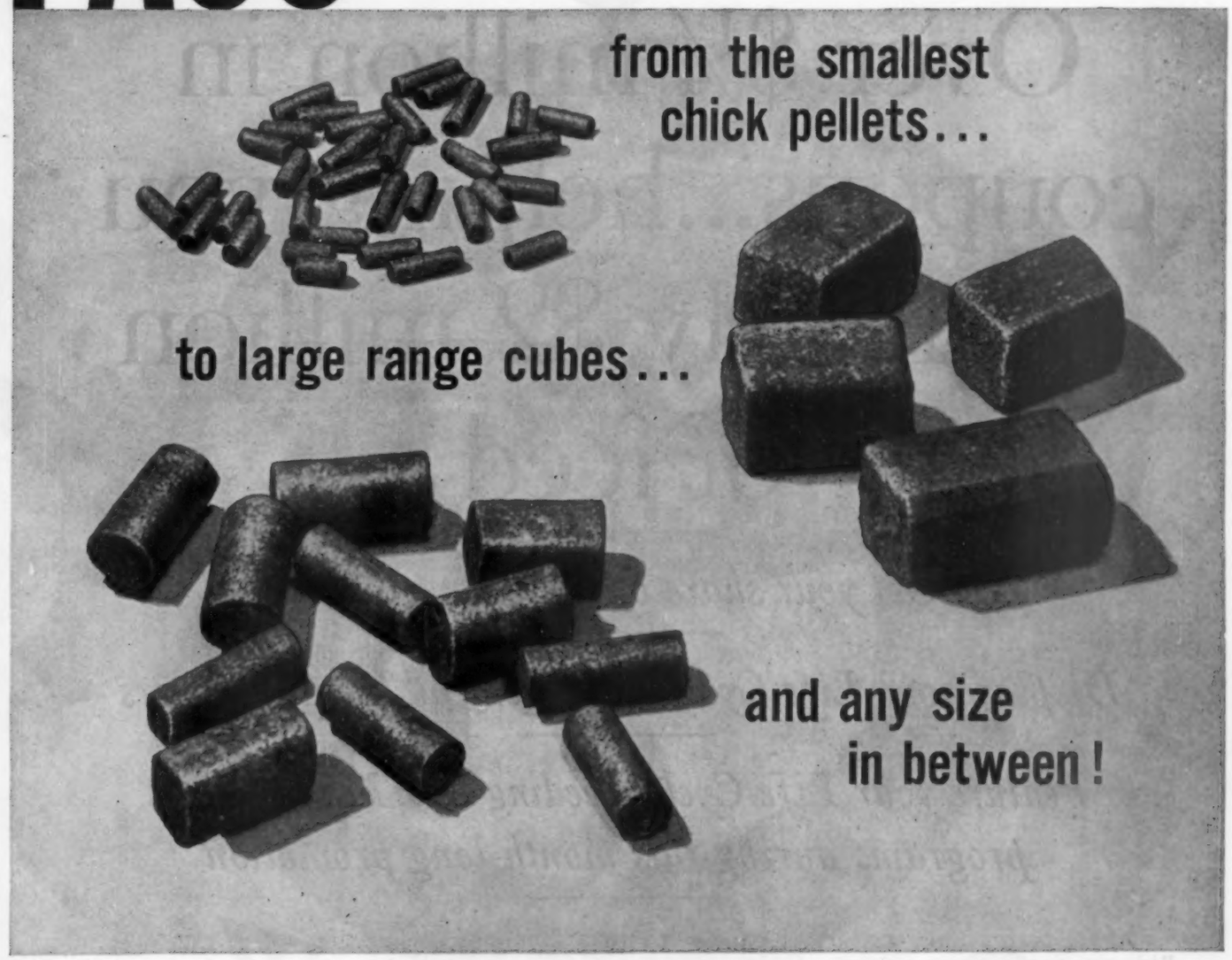

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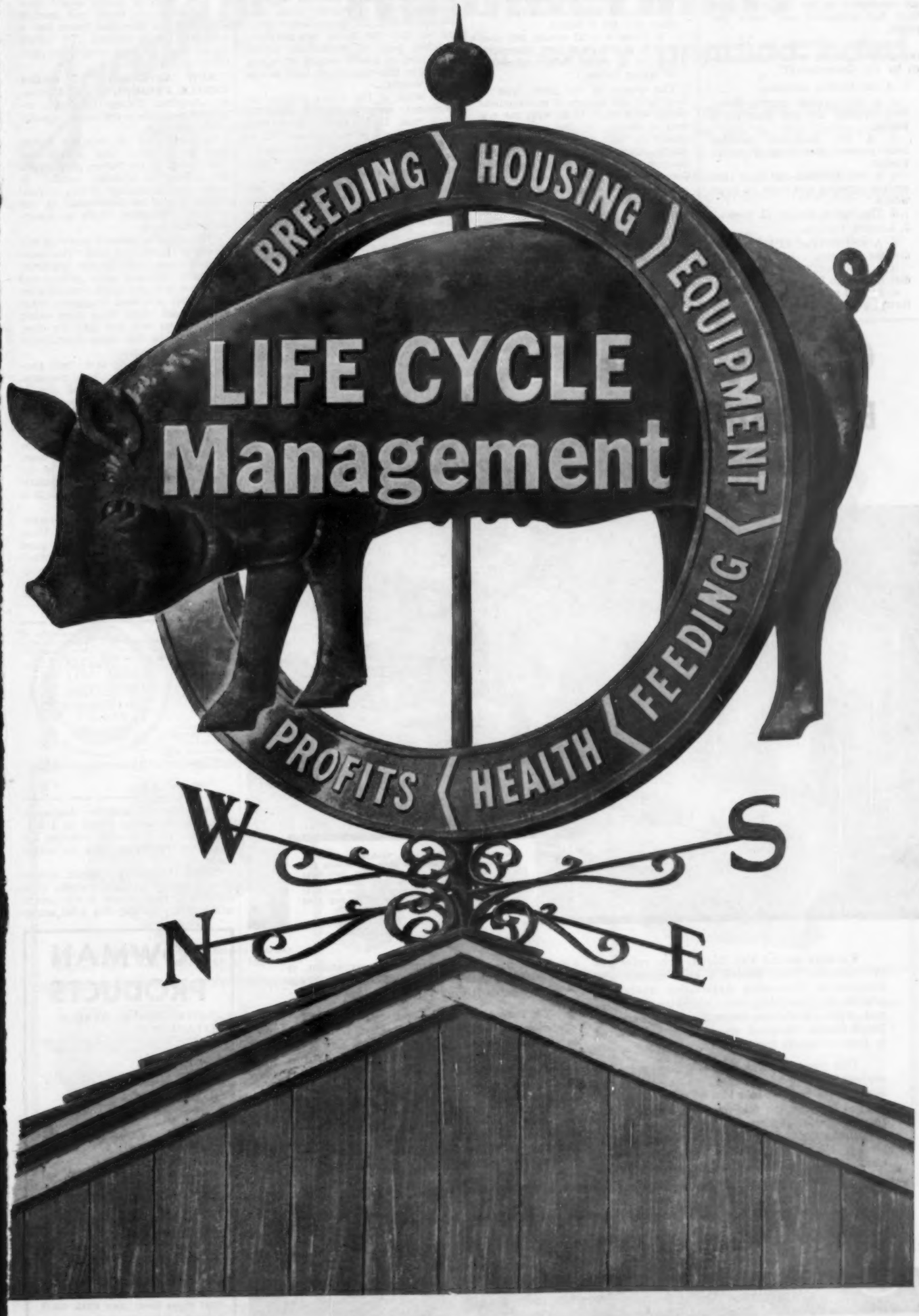
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large eggs produced may be increased. The number of eggs produced and hen house mortality was not conclusive in the tests. The high fiber diet increased feed costs per pullet.

Three basic methods for feeding replacement pullets were recommended by Dr. Quisenberry:

1. A full feeding program.
   a. A 21% protein starter diet—well fortified and low fiber for 8 weeks.
   b. A low fiber-well fortified 18% protein diet from 8 to 16 weeks.
   c. A well fortified-low fiber 16% protein growing diet from 16 to 20 weeks.
   d. The laying diet at 21 weeks.
2. Limited feeding.
   a. A well fortified 21% low fiber diet for 8 weeks.
   b. A well fortified 18% low fiber diet from 8 to 21 weeks.
   c. In cold weather and near maturity, pullets will need to be fed an additional 2-4 lb. of grain daily to reduce mortality and culls.
3. High fiber feeding program.
   a. Feed a well fortified 21% low fiber diet for 8 weeks.
   b. From 8 to 21 weeks, full feed a 15% protein and 15% fiber diet.
   c. At 21 weeks, feed conventional laying ration.

The season of the year, type of bird used and system of management would have much to do with the system of choice. Dr. Quisenberry suggested for light breed egg production stock: High fiber for colony cage rearing, the limited feeding program for spring and summer range rearing and low fiber-full feeding for confinement floor pens for fall and winter rearing.

Energy-Protein Level

In reporting on energy-protein level for poultry, Dr. Quisenberry pointed out the changes in egg production levels and what the discovery and use of new vitamins, amino acids, minerals and feed additives is doing for our feeding programs. The use of rations varying from 13 to 17% protein that are well fortified in other nutrients has at recent times been recommended. Dr. Quisenberry pointed out that the laying hen normally reaches peak of production during the third or fourth month of laying. At about this time, birds tend to lose body weight.

In work at the Texas station, experiments were conducted using 13-15% and 17% protein diets with varying levels of energy and fed at different stages during the laying period. Tentative conclusions drawn from this work were:

1. The 13% protein diet did not maintain body weight during egg production, nor was egg production as satisfactory as with higher levels of protein.
2. Body size, egg production and egg weight were greatest for birds fed the 17% protein and moderate energy level.
3. Feed efficiency was greatest for hens receiving the 17% protein diet.

Dr. Quisenberry summarized by stating that types of ingredients such as corn, milo or barley might have an influence on feeds and feeding practices, but they had found that a low fiber, well fortified 17% laying ration gave the best results for light breed laying hens.

NEW APPROACH TO DAIRY CATTLE FEEDING—C. Y. Cannon, Sr., Brigham Young University, reviewed research in the realm of dairy cattle nutrition.

He concluded his talk by saying that he believes that commercial dairy herds in the future may be fed all pelleted or wafered rations, in which the percentage of hay to concentrates will be determined by the level of production which is expected of the herd.

"Cows will be allowed to eat at will from the pellets," he said. "The heavier producers, with bigger appetites, naturally, will eat more pellets and therefore will get more concentrates which they will need to support their higher yield, while those cows which produce less will eat less for they will not have the same stimulation to their appetite.

"This method," he said, "will provide the dairyman with a constant uniform supply of feed and also it should reduce his labor expense."

AMINO ACIDS AND ENZYMES IN CHICK RATIONS—Dr. J. O. Anderson, Utah State University, reported that experiments have been conducted at the institution "to define more accurately relative quantities of the essential amino acids in a balanced chick mixture."

Accompanying table shows the composition of a mixture which Utah State researchers believe has "a good balance of the essential amino acids." Dr. Anderson noted that university workers are conducting further experiments with the idea of improving this set of values.

	Requirement per cent of 20% protein diet	Composition of a balanced mixture (tentative) % of diet
Arginine	1.2	1.35
Histidine	0.3	0.42
Lysine	1.0	1.25
Leucine	1.4	1.43
Isoleucine	0.6	0.86
Valine	0.8	0.98
Phenylalanine and tyrosine	1.6	1.40
Tryptophan	0.2	0.24
Methionine and cystine	0.8	0.67
Threonine	0.6	0.75
Total	8.5	9.35

"We believe," said Dr. Anderson, "that the following would be a better basis than present practice for future nutritional studies on amino acids:

"When the energy, vitamin, mineral and amino nitrogen content of a diet are defined, there is one amino acid mixture having this total amino

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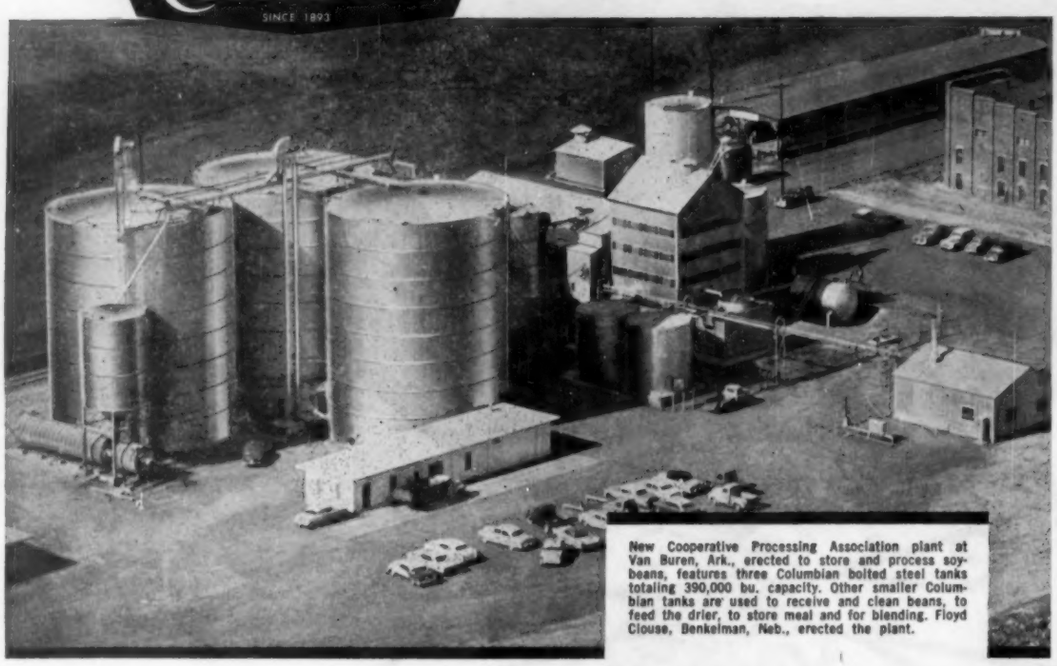

New Cooperative Processing Association plant at Van Buren, Ark., erected to store and process soybeans, features three Columbian bolted steel tanks totaling 390,000 bu. capacity. Other smaller Columbian tanks are used to receive and clean beans, to feed the drier, to store meal and for blending. Floyd Clouse, Benkelman, Neb., erected the plant.

Farmers around Van Buren, Ark., raise lots of soybeans. They needed a local market and Cooperative Processing Association wanted to provide it. Consulting with Columbian engineers and with Columbian recommended contractor, Floyd Clouse, the plant was planned and erected in time to handle the 1959 crop.

This plant receives, cleans, stores and dries soybeans and processes them into meal and oil. Some of the meal is sold locally, much of it goes to feed mills in the mid-west for blending into formula feeds. It s success is evidenced by the fact that substantial expansion of its capacity is already under way. (That's a valuable plus in Columbian designing and Columbian bolted steel construction — perfectly matching expansion is quick and economical because "Look Ahead" engineering plans it that way.)

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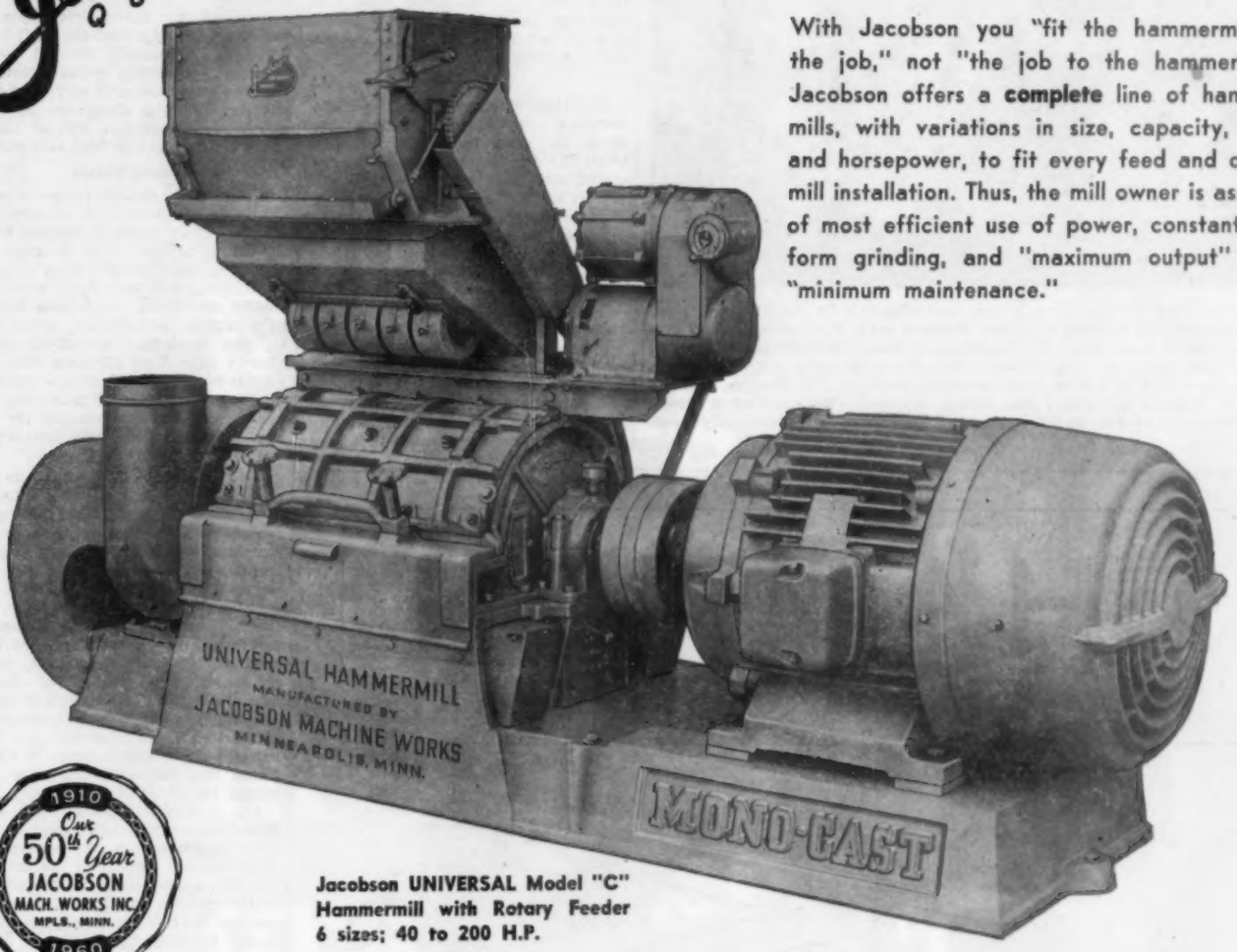

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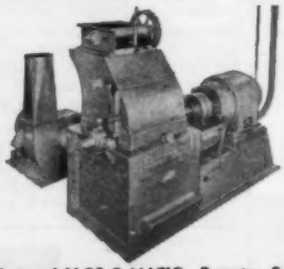

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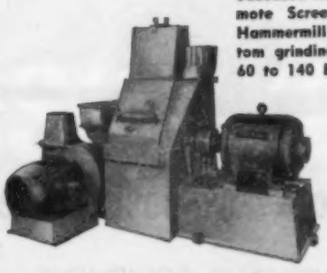

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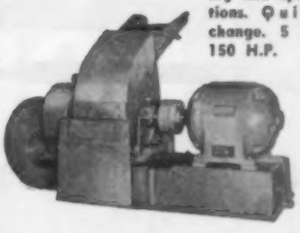

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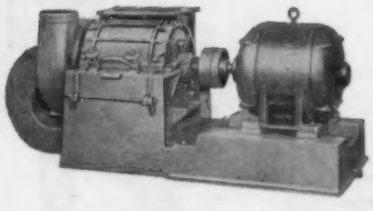

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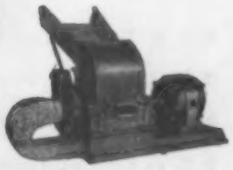

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MONTANA OFFICERS—New officers and directors of the Montana Feed Manufacturers and Dealers Assn. are pictured here. They were elected at a meeting held in connection with the Montana Nutrition Conference in Bozeman. Left to right are Ted Westin, Milk River Elevator Co., Chinook, a director; Leo Becker, Teslow, Inc., Bozeman, director; Ted Walters, Midland Feed Co., Billings, president; Jim Gustin, Kalispell (Mont.) Feed & Grain, vice president, and Pat DeVoir, Occident Elevator, Sidney, secretary-treasurer.

nitrogen level which would allow faster growth in a given bird than any other possible mixture. This mixture might be termed a 'balanced' mixture. This concept appears to us to be more consistent with the results of our experiments and the experiments of many others.

"We do not claim to have defined the composition of such a mixture. Note that our definition does not state how much better this balanced mixture would be than one which deviates from it."

Enzymes

Reporting on experiments in which enzymes were added to high barley diets, Dr. Anderson explained that Utah State researchers have concentrated somewhat on diets containing a high level of a new hulless barley. He said many different enzyme preparations have been tested to compare activity and determine what type of enzyme activity is responsible for the improvement noted.

"The most active preparations are those sold primarily for their alpha-amylase activity," he said. "This suggests that alpha-amylase is responsible for the improvement noted in our experiments. But, as near as we can tell, the alpha-amylase activity of the various preparations is not correlated with the response obtained in chick tests. Malt diastase has alpha-amylase activity but is nearly inactive in chick tests. We and the Washington State group have found a highly purified alpha-amylase to be inactive. The results suggest that alpha-amylase may be in part responsible for the improvement of high barley diets but it is not active by itself."

Dr. Anderson noted that "none of the proteases improved the high barley diets significantly. In fact, some of them significantly reduced growth. In some cases we have decreased the stickiness of the droppings by the use of these enzymes, and at times have obtained better feed efficiency."

Soaked Barley

If barley is soaked in water and dried at temperatures between 30 and 60° C. its value is increased for the chick, he said. "Our average response in chick growth rate over 22 experiments has been 12%. When we soaked and dried the hulless barley at a higher temperature, about 90° C., the procedure decreased chick growth rate. This suggests that the hulless barley itself contains enzymes or bacteria capable of producing enzymes which are responsible for the improvement obtained by soaking at the lower temperature."

"We do not believe that the average response that we have obtained by soaking in water or addition of enzymes to the diet, represents the maximum possible. In several experiments we have added enzymes to the water used in soaking hulless barley or soaked the barley in a water extract of another grain. In almost all cases the response obtained has been greater than that obtained by soaking in water or addition of enzyme to the diet. Our average response to soaking in an enzyme solution is about 18%. This procedure has been used in seven experiments. We have found this treatment may also increase the value of corn."

Dr. Anderson reported that Utah State researchers have used an enzyme supplement in two experiments with turkeys carried to market age. "In both experiments the weight gain of the turkeys was greater when the enzyme was added to a high barley feed," he said. "The average difference was about .4 lb. in 1958 and .8 lb. in 1959."

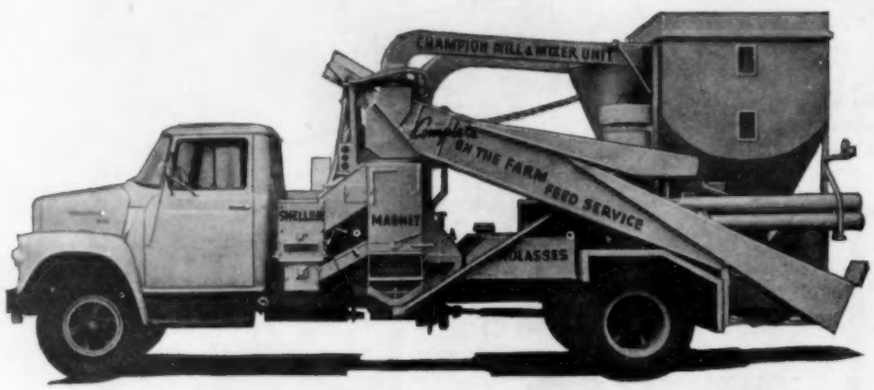
In addition to other experiments, enzymes have been added to high barley laying rations at Utah State. According to Dr. Anderson, the benefits obtained by the addition of enzymes "has been small."

ECONOMICS OF PELLETING OPERATION—"Die specifications must and will vary for different materials." This is the thought stressed by Al Alessio, California Pellet Mills

(Turn to CONFERENCE, page 85)

CHAMPION

For the Finest in Mobile Equipment . . .



Simple design—Rugged construction—Low-cost maintenance

STANDARD EQUIPMENT—

- Direct drive, 332 cu. in. engine-driven mill.
- 14-ft. swinging drag feeder.
- Permanent magnet located *ahead* of grinder.
- 2- to 3-ton mixing capacity.
- 15-ft. swinging discharge auger.
- Low, wide concentrate hopper.
- 2- to 3-ton concentrate carrying capacity.

OPTIONAL EQUIPMENT—

- GMC Diesel direct-drive power.
- Platform concentrate hopper.
- 8-compartment bulk concentrate carrier.
- Air unloading (plus standard auger).

Champion's 2 to 3-ton carrying capacity of bagged concentrate can be dumped directly into the mixer through the platform concentrate hopper. This eliminates extra handling on the part of the operator, and also eliminates the need for an extra ingredient truck.

CHAMPION PORTABLE MILL CO.

2109 COMO AVENUE SOUTHEAST • MINNEAPOLIS 14, MINNESOTA

"If Gooch recommends a feeding program they've proved it works. As a dealer, knowing my customers will get results helps me sell feed."

GOOCH'S BEST

Lincoln, Neb. Salina, Kan.
Vicksburg, Miss. Dalhart, Tex.
Council Bluffs, Iowa

Exciting new concept in grass silage preservation!

SILOTRACIN

the new silage preservative that uses the antibiotic principle

for the very first time!

Commercial Solvents Corporation has done it again. Pioneer producer of penicillin... first with bacitracin for the feed trade...and first with zinc bacitracin, too. CSC now announces the exciting, new *antibiotic* concept in grass silage preservation – Silotracin!

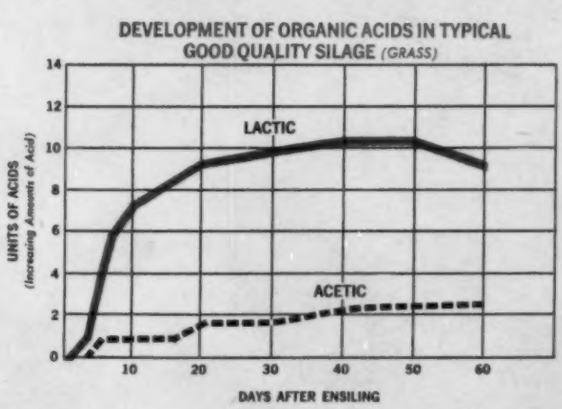
You may already have heard just how successful Silotracin is. First and foremost, it prevents spoilage. And it puts an end to the hold-your-nose smells of bad silage by eliminating the cause! Fact! Unlike other products which merely mask the odors, Silotracin gets rid of the basic cause – putrefaction. Result: high-quality silage, high nutritive value – along with improved palatability, digestibility and feed efficiency. It does the job *antibiotically*. And at low cost!

Its action in silo is selective

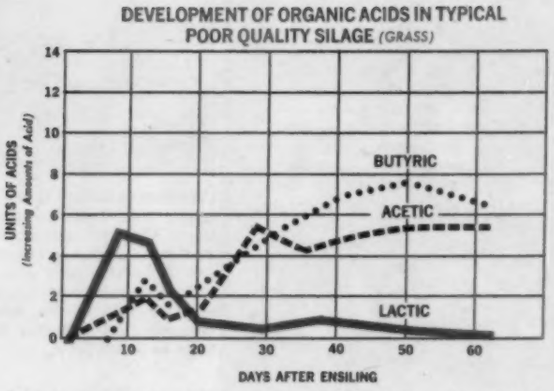
Easy-to-use Silotracin, applied directly to forage, quickly establishes the proper level of acidity and the right anaerobic conditions essential to good silage. The *selective, biologic* action of the antibiotic suppresses harmful bacteria that make poor silage, gives helpful bacteria the environment they need to make best-quality silage.

It does the job in the critical first 72 hours

Good grass silage is made in the first 72 hours or it isn't made at all. It's during this critical "now or never" period that Silotracin does its job. It permits the lactic acid-producing bacteria, responsible for high-quality silage, to flourish. It checks the butyric acid-producing bacteria that ruin silage.



This is the "picture" of good silage. The lactic acid is formed quickly – in the first 72 hours – and is sustained at high level throughout the storage period.



This is the "picture" of poor silage. Butyric acid, with its offensive odor, predominates. The lactic acid content is negligible and the feed value of the silage is seriously reduced.

FEED EFFICIENCY OF SILOTRACIN-TREATED SILAGE IN MILK PRODUCTION (Rusoff-LSU)				
	SILAGE			
	1	2	3	4
Average for 3 periods of 14 days each, 12 Lactating Holstein Cows	Silotracin	Molasses	Bisulfite	Control
Average lbs. of silage consumed per lb. of 4% Fat Corrected Milk	2.5	2.8	2.6	3.2

In this test, the Silotracin-treated silage was more efficient than the other silages in the production of milk. Less Silotracin-treated silage was consumed per pound of milk produced and this can be presumed to be the result of a greater amount of digestible nutrients in this silage.

Silotracin passes all the tests

Silotracin has been tested for several seasons both in the laboratory and in college field trials. All the results show that with Silotracin, high-quality silage can be expected every time in any type of silo — upright, tower, bunker or trench. It preserves forage nutrients over a wide range of harvesting and storage conditions. It reduces 3 kinds of silage loss: surface spoilage, nutrient loss and loss of dry matter. Excellent results have been obtained with such grasses as Brome, Orchard, Johnson, St. Augustine and Bermuda. It has also been used with complete success on clover and alfalfa and on sorghum, oats, millet and corn. Silotracin is non-corrosive, cannot harm machinery or equipment. It's completely safe for humans and animals.

Silotracin=Better silage =Better milk production

Animals offered a choice showed a preference for silage treated with Silotracin. Excellent palatability has been reported by Rusoff of Louisiana State University. Improved digestibility has also been noted. The Silotracin treatment seems to hasten the breakdown of cellulose so that the rumen bacteria can finish the process both more quickly and more completely.

Silotracin is easy to use and attractively priced

It's added directly to forage by blowing in at the silo or chopper. It can also be broadcast by hand directly on the wagon. Silotracin is a complete preservative by itself, no additives of any kind are needed. You can sell this new, advanced silo preservative *profitably* at a price most attractive to your customers and competitive with all other products on the market today, new or old!

Silotracin available to feed manufacturers in 2 forms

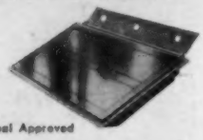
You can now service your customers' best interests — and your own — by selling the antibiotic concept of preserving silage. Silotracin is available in 50-pound multi-wall bags in ready-to-use form. Each pound of ready-to-use Silotracin supplies 1 gram of specially processed *zinc bacitracin* on a soy bean mill feed carrier. A Silotracin concentrate is available for use by manufacturers who want to package their own ready-to-use silage preservative. Write for all the data on Silotracin.

A highly-informative, 4-page, illustrated "educational insert" is just off the press. Get your free copy. Write Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Ave., New York 16, N. Y.

new product-
new selling opportunity-
SILOTRACIN!

EXTRA...TO MANUFACTURERS AND USERS OF FEED EQUIPMENT

You can't buy a better magnet at a better price anywhere than the STEARNS INDOX V Ceramic Plate Magnet.*



*Mill-Mutual Approved

There's a Stearns INDOX V permanent plate magnet for every feed equipment application — hammer mills, roller mills, feed conveyors, choppers, mixers, rotary cutters, burr stone mills and many other processing machines. A complete range of standard sizes and strengths, 4-inch to 48-inch, is available to fit practically all present designs.

Write, wire or call today for a demonstration and price quotation.

Stearns also builds a complete line of permanent magnet drums, grates and pulleys for protection against "hardware" damage.

Write for these informative bulletins:

Bulletin 1074F — INDOX V Permanent Plate Magnets
Bulletin 1021F — INDOX V Permanent Magnet Pulleys
Bulletin 1052F — INDOX V Permanent Magnet Drums
Bulletin 1072F — INDOX Permanent Grate Magnets

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Virginia Bulk Plant Speeds Delivery of Complete Feeds

By Al P. Nelson
Feedstuffs Special Writer

A large bulk station, in operation for more than a year, speeds the delivery of complete feeds for Cooperative Mills, Inc., at Harrisonburg, Va., throughout a 78 mile radius.

The firm manufactures feed at Cincinnati, Baltimore, Seaford, Norfolk, Richmond and Roanoke for Southern States Cooperative outlets.

The Harrisonburg bulk plant, managed by Kelly Goldizen, receives from 8 to 10 cars feed per day from Roanoke for storage in overhead bins for bulk delivery. Mr. Goldizen reports that 10 of these bins hold 20 tons each and 12 hold 10 tons each.

About 10 types of feed are stored here. Included are broiler, turkey starting and growing mashes and laying feeds.

The bulk plant is set up to handle about 30,000 tons a year. The plant has delivered up to 165 tons per day, and as much as 600 tons in one week.

The feed arrives in hopper cars from Roanoke, with the cars sheltered from the weather. Out of the hopper car, the feed goes into a pit between the rails and is augered a few feet into a 100 ft. Aeroglide bucket elevator. The feed is then

HOPPER SCALE — Here are the traveling hopper scale and truck beneath for loadout. Standing (left to right) on the catwalk are Kelly Goldizen, plant manager, and James Lough, employee.

elevated to a 12-in. conveyor belt which takes the feed to one of the 22 storage bins. A hopper car of pellets can be unloaded in 30 minutes (50 tons), while a car of meal requires about 45 minutes, states Mr. Goldizen. A Kirk Bloom dust collector gets the fines out of pellet feed unloadings, reports Mr. Goldizen. About 75% of the feed received in the bulk plant consists of pellets.

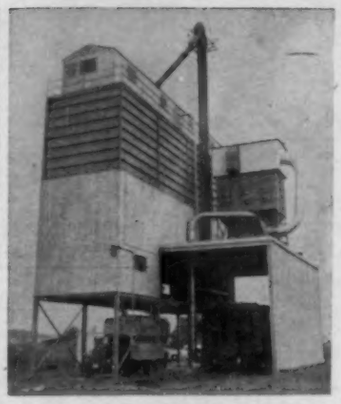
When the bulk plant delivers feed from bins to bulk trucks, the desired amount is delivered into a traveling Howe scale with a 5 ton hopper. The scale can be moved along the area under the bins, with the operator walking on a 3 ft. wide catwalk as he handles the scale. The feed drops from the storage bins by gravity.

The weigh ticket is stamped with the exact weight of each load delivered to a bulk truck at the bulk plant, so that the customer knows exactly how much feed is in each load brought to his farm.

Bulk Delivery

Bulk feed delivered out of the plant goes to Southern States Cooperative agencies within a 75 mile radius of Harrisonburg. The bulk plant has a 12 ton capacity Sprout-Waldron pneumatic bulk truck which has four compartments of 3 tons each. The bulk feed delivery charges per ton are $3, up to 40 miles; $4, 40-60 miles, and $5, 60-80 miles.

The bulk plant management likes to deliver 12 ton loads to utilize the truck most effectively. Only about 10% of the bulk feed handled at the



EXTERIOR—Here is the Cooperative Mills, Inc., bulk receiving and delivery plant for serving customers of 22 Southern States Cooperative dealers. Note sheltered area for hopper cars and adjacent covered loading spot for bulk trucks. Also note location of dust collector for handling fines in pellet feeds.

plant is delivered by Cooperative Mills, Inc. The rest of the volume is called for by customers, or customers hire custom bulk haulers to get the feed for them. This is in contrast to the bulk feed delivered from the mill at Richmond, Mr. Goldizen points out, where the mill hauls most of the bulk feed to customers of Southern States Cooperative dealers in the area.

The farmer who hauls his own bulk feed from the bulk plant at Harrisonburg usually takes about 6 tons. He gets a discount of $4 ton. The feed is purchased through a Southern States Cooperative dealer. In Harrisonburg, the Southern States Cooperative store and new custom mill are adjacent to the Cooperative, Inc., bulk plant. The manager of the store and custom mill is G. A. Roberts.

If the farmer owns his feed storage bin, then he gets a $5 per ton discount on bulk feed. Most farmers have 4-7 ton storage bins, Mr. Goldizen reports.

The bulk plant is operated by Mr. Goldizen, manager, James Lough, an employee, and Verlin Carper, truck driver. The plant handles the bulk feed orders for 22 dealers in the region, using either their own 12 ton truck, or having farmers call for feed or contract for hauling. One farmer who hauls his own feed takes 30 tons per week.

Poultry Feed

Only poultry feed is stored and handled at the bulk plant at present. Turkey feed constitutes about 50% of the feed volume sold and delivered. Turkey flocks range in numbers from 3,000 to 5,000, while broiler flocks are 3,500-4,000. Laying flocks are from 3,000 to 6,000. Mr. Goldizen says there are many small poultry flocks in this part of Virginia.

Mr. Goldizen, with the help of Mr. Carper, keeps accurate records monthly on the bulk truck operating

BULK TRUCK—Verlin Carper, bulk plant truck driver, loads feed into the truck from traveling hopper scale.

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Your customers depend on you for feeds that provide maximum health protection for their animals. You can offer this protection, without increasing your mineral inventory, by using Sterling Swine Supermix Blusalt in place of plain salt. Sterling Swine Supermix is fortified with extra zinc to protect against Parakeratosis, and contains six other vital trace minerals as well. Thus one fine product provides a proper trace-mineral balance for all swine feeds—pre-starter, starter, sow and fattening feeds. For mixing data, guaranteed analysis and other formula service, contact International Salt Company's Farm & Feed Department, Clarks Summit, Pa. District offices: Boston, Buffalo, Charlotte, Chicago, Cincinnati, Detroit, Newark, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis.

Service and research are the extras in

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MEMBER AMERICAN FEED afma MANUFACTURERS ASSOCIATION INC.

ADA CONVENTION SPEAKERS—These four men spoke on beef cattle production and feeding at the recent American Dehydrators Assn. convention in Colorado Springs (left to right): Kenneth Monfort, Monfort Feed Lots, Greeley, Colo.; Dr. P. H. Stephens, Farm Credit Banks of Wichita, Wichita, Kansas; Dr. W. M. Beeson, Purdue University, Lafayette, Ind., and Dr. William H. Burkitt, Montana Flour Mills Co., Great Falls.

costs. Here are some sample figures on truck operating costs:

Income earned per mile ..... (based on revenue and tons of feed)	43¢
Operating cost per mile	33¢
Net saving per mile ..... (Salary and wages amounted to 85¢ ton)	10¢
Mileage per gallon	3.7
Mileage per gallon (four month average)	4.1

Mr. Carper says he can unload 3 tons of bulk feed in 7½ minutes. The average stop takes 15 minutes, including setting up. He has unloaded 12 tons at one stop in 45 minutes.

Repairs and service for one year on the truck amounted to $211.73, Mr. Carper and Mr. Goldizen said.

"We can handle a great deal of feed through this bulk plant," states Mr. Goldizen. "For instance, we can have two hopper cars under shelter, with one unloading, and we can also serve a stream of bulk trucks with finished feeds at the same time. The in and out driveway for trucks works fine to speed traffic and loading of feed."

Freight Rates Given Permanent Status

MEMPHIS, TENN.—Freight rates for soybeans, corn, wheat, oats and barley to Gulf ports for export, under investigation by the Interstate Commerce Commission, as I&S 7008, have been made permanent, it was reported by officials of the Mid-South Soybean & Grain Shippers Assn.

The association and railroads joined in seeking to make the rates, previously temporary, on a permanent basis.

The rates had been protested by barge lines and other interests. The decision, however, is subject to review by the entire body of the ICC, since the verdict was made by division 2.

Rates vary from 10¼¢ in Louisiana to 12¢ in West Tennessee, Western Kentucky, Northern Arkansas and Southeastern Missouri.

The reduction amounted to from 3¢ in the northern tier to as much as 4¾¢ bu. in the southernmost affected area.

The ICC held a hearing in Memphis last summer, then took the matter under advisement.

Membership Drive

WESTFIELD, MASS. — Following an announcement that membership dues had been set at $1 per year, the New England Egg Producers Assn., Inc., mailed membership letters to New England's poultrymen for a membership drive.

The letter briefly outlines the group's primary objectives and tells of recent developments in the association's Quality Egg Council seal program.

It is expected that more than 1,000 New England egg producers will join the New England organization, officials said.

"QUALITY MAKES THE DIFFERENCE"

Midwest
SWEET-DRIED WHOLE WHEY

ONE economical ingredient to meet the TWO most critical requirements of feeds for baby animals

TOP NUTRITION

High level of Lactose — the most readily digested carbohydrate for all young animals. Plus — high quality milk protein, natural milk minerals and vitamins.

PALATABILITY

The sweeter taste of fresh, low acid, low ash, roller dried whole whey adds more taste appeal for greater early feed consumption.

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DUNDEE, ILLINOIS HAzel 6-3411

"From the Cow to Your Feed Bag, and Kept Sweet All the Way"

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- Shorts
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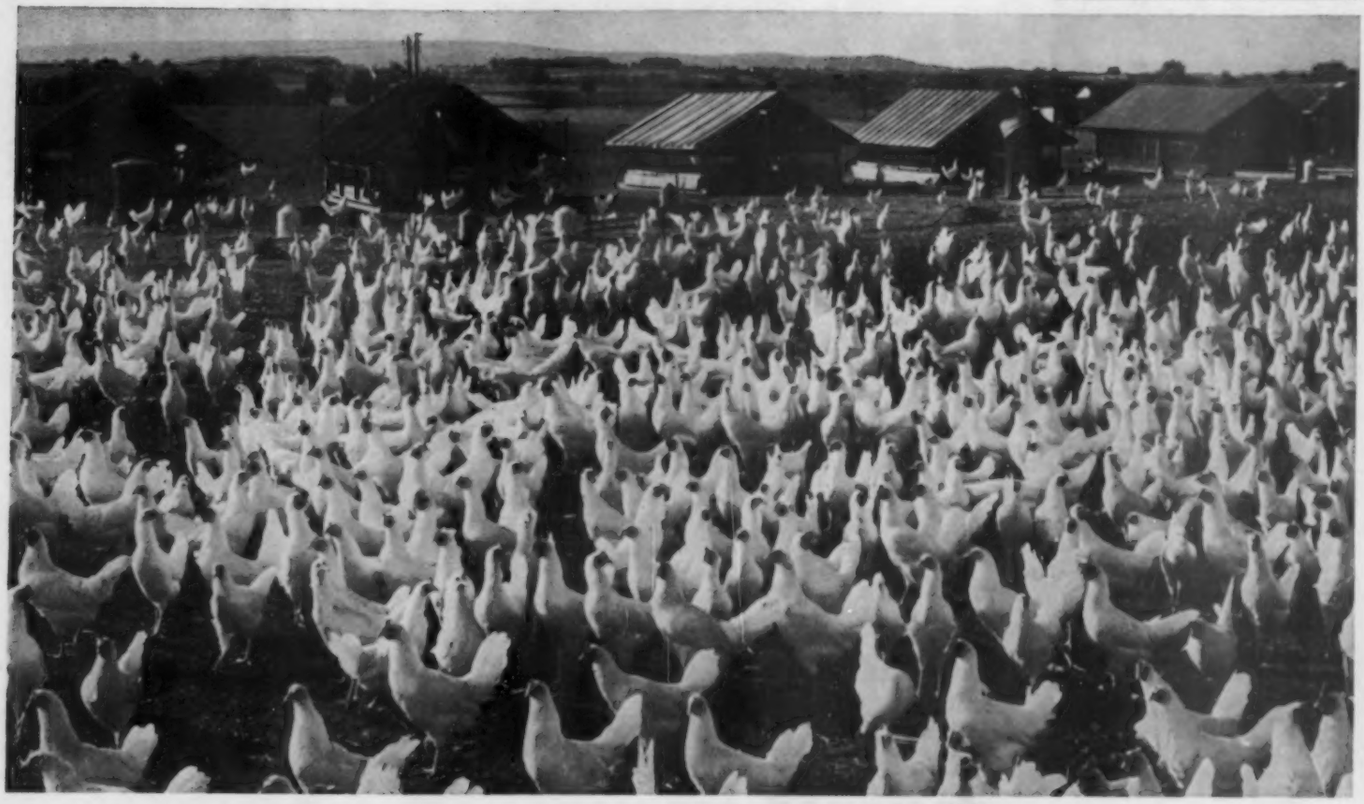

GUARANTEED ANALYSIS OF T-H MIX FOR POULTRY

1

(for Chick and Broiler Starter Rations)

GUARANTEED ANALYSIS	PER POUND
Vitamin A	200,000 USP Units
Vitamin D_3	200,000 I.C. Units
Vitamin B_{12}	0.6 Mgs.
Riboflavin	150.0 Mgs.
d-Pantothenic Acid	500.0 Mgs.
Niacin	2,000.0 Mgs.
Choline Chloride	10,000.0 Mgs.
Vitamin E	100.0 I.U.
Menadione Sodium Bisulfite	200.0 Mgs.
Methionine Hydroxy Analogue	0.075 Lbs.
1,2-Dihydro-6-Ethoxy-2,2,4-Trimethylquinoline	0.025 Lbs.
Manganese	3,234.0 Mgs.
Zinc	7,945.0 Mgs.
Feed Grade Zinc Bacitracin	0.5 Grams

2

(for Chick Grower, Poultry Laying, Breeding and Concentrates Rations)

GUARANTEED ANALYSIS	PER POUND
Vitamin A	500,000 USP Units
Vitamin D_3	100,000 I.C. Units
Vitamin B_{12}	0.6 Mgs.
Riboflavin	100.0 Mgs.
d-Pantothenic Acid	500.0 Mgs.
Niacin	1,000.0 Mgs.
Choline Chloride	5,000.0 Mgs.
Menadione Sodium Bisulfite	50.0 Mgs.
Vitamin E	100.0 I.U.
1,2-Dihydro-6-Ethoxy-2,2,4-Trimethylquinoline	0.025 Lbs.
Manganese	3,234.0 Mgs.
Zinc	7,945.0 Mgs.
Feed Grade Zinc Bacitracin	0.5 Grams

3

(for Broiler Grower Rations)

GUARANTEED ANALYSIS	PER POUND
Vitamin A	120,000 USP Units
Vitamin D_3	50,000 I.C. Units
Vitamin B_{12}	0.6 Mgs.
Riboflavin	200.0 Mgs.
d-Pantothenic Acid	500.0 Mgs.
Niacin	1,000.0 Mgs.
Choline Chloride	6,000.0 Mgs.
Menadione Sodium Bisulfite	50.0 Mgs.
Methionine Hydroxy Analogue	0.05 Lbs.
1,2-Dihydro-6-Ethoxy-2,2,4-Trimethylquinoline	0.025 Lbs.
Manganese	3,234.0 Mgs.
Zinc	7,945.0 Mgs.
Feed Grade Zinc Bacitracin	0.5 Grams

NEW T-H MIX OFFERS A COMPLETE LINE OF POULTRY PREMIXES

New T-H MIX is a combination feed and premix program that lets you customize your poultry feeds to fit your particular needs—without expensive, unnecessary over-fortification or duplication of additives. T-H MIX for poultry contains only the additives that sensibly belong in a premix. And when used in conjunction with the T-H poultry feeding program, T-H MIX gives you customized feed formulation. There's no guesswork or waste involved in mixing! You just select the one combination of ingredients in the T-H poultry feeding program that's right for you, and your work is done.

Because T-H MIX offers a poultry premix for every growing stage, you can do away with piecemeal ordering, waste and unbalanced inventories.

In addition to poultry premix, T-H MIX offers a complete line of packaged premixes for swine, turkey, cattle, sheep, dogs and mink.

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Chemical Company
2915 Southwest Boulevard
Kansas City, Missouri

SEND FOR FREE BOOKLET

For complete information about the T-H Premix and Feed Program for Poultry, Swine and Turkey, write for this free booklet today. Mail this coupon to Thompson-Hayward Chemical Co., 2915 Southwest Blvd., Kansas City 8, Mo.

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ADDRESS_____

CITY_____ STATE_____

JOE BROOKS

BY AL P. NELSON

Employees Are Human

When Joe Brooks came home to dinner that mid-winter night, his wife Mary was in the kitchen frying chicken. Her brown hair was freshly waved, her pearl earrings were still on and Joe could see that she had an apron on over a blue party dress.

"So glamor has come to the kitchen, eh?" asked Joe, going to his wife and putting his arms around her. "Wow, let's have your picture taken in color and sent to a woman's magazine on how to brighten up a kitchen."

Mary flushed and her eyes sparkled. It was quite evident that she liked this male attention—from the right guy. "Oh, quit your kidding, Joe. I just got in a half hour ago from the party of my bridge club at the White Swan, and I didn't have time to change. So I slipped this apron on and got the chicken ready. I know you and the twins don't like to wait for your meals."

Joe backed away and circled his wife. "Wow, and those high heels. Mary, how can you women walk on them?"

"Oh, we learn," Mary said brightly, peeking under the frying pan cover at the sizzling chicken.

"Gosh," Joe said, pouring a small glass of orange juice, "women have it easy nowadays. They go to parties and have a good time, while we feed men slave at the mill, wrack our brains for business building ideas—just to make a few bucks to keep our families from going into bankruptcy."

"It isn't that bad, and you know it," retorted Mary. "How can a man who owns a paid up mill and equipment, has his own home, car and stock in the bank and some other savings go into bankruptcy?"

Joe winced. "I asked for that, didn't I? Well, I worry nights trying to keep everything going."

"Here, sit down and eat and you'll feel better," Mary said. "You ought to set aside one hour a day for worrying, then forget about it the other 23 hours. Boys, come down and eat—and I mean right away. Those comic books will wait."

There was a rumble from upstairs, and then rapid thumpings sounded on the stairs as the twins tried to beat each other to the table. "Here, here," cautioned Joe. "Where are your manners, boys?"

Quietly, obediently, the twins seated themselves. They knew when their father meant business, and when he didn't.

"You folks eat all the chicken," Mary said. "That great big delicious steak I had for 2 o'clock luncheon filled me. I'm not one bit hungry."

"Oh, Mom, do you have to tell us that?" Joe, Jr., said. "You know we like steak so much."

"Well, it's the truth," Mary said. "That steak, those baked potatoes, that apple pie with ice cream, was so good!"

Joe and the twins groaned. "Well, boys," Joe said, "fried chicken is good, too."

"Certainly, it is," Mary said brightly, "and if I hadn't gone to that dinner, I wouldn't have gotten an idea for Joe's business."

Joe dropped his fork. His eyes brightened. "A business idea? What is it?"

"Oh, Dad," protested Jimmie, "do you and Mom always have to talk business at the table? Mom never hears us ask for things when you talk."

Mary smiled. "The boys are right, Joe. After dinner, I'll tell you, if I get a little help with the dishes."

"Blackmail, eh?" growled Joe amiably, unconsciously speeding up his eating.

After the dishes were done, Joe hung up the dish towel and asked, "What's this business idea?"

"Aren't you going to kiss me first?"

"More blackmail, eh? Well, sure."

"The White Swan has a good idea, Joe. They know that employees like to be recognized for their work," Mary said.

"Yeah?"

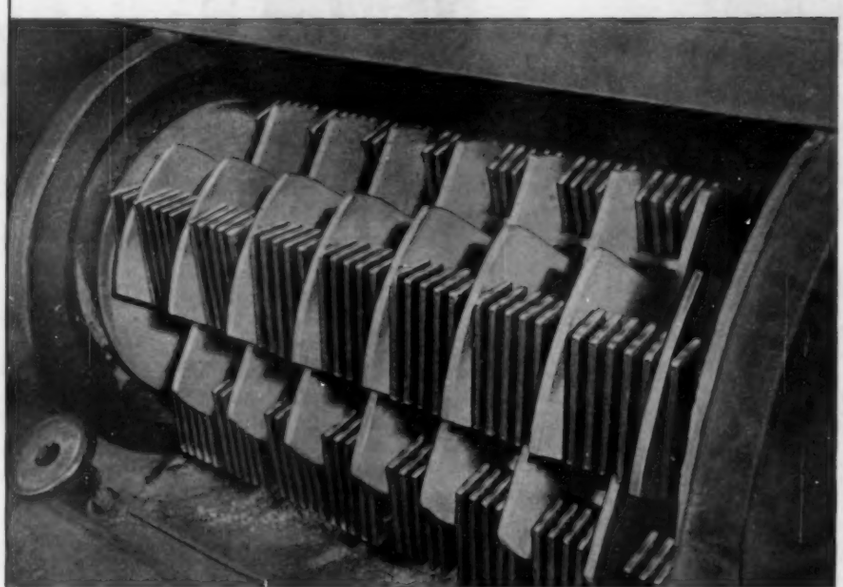
"At the table I sat was a little card which said, 'Your waitress is Virginia Adams. She will be happy to serve you'."

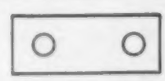
Joe grinned, "That's a nice touch. I can see that."

"Each table had a card identifying each waitress," Mary pointed out. "And I think this identification and

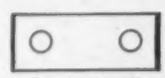
(Turn to JOE BROOKS, page 77)

Increase grinding production with the PACAL HAMMER designed for you

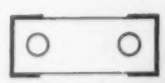




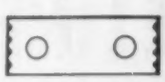
Strap Hammer. Heat treated, not hardfaced.



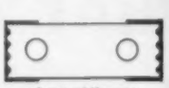
Strap Hammer with hardfaced ends.



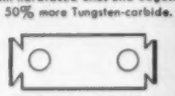
Strap Hammer with hardfaced ends and edges.



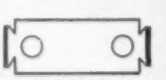
Serrated Edge Hardface Hammer with hardfaced ends



Serrated Hammer with hardfaced ends and edges. 50% more Tungsten-carbide.



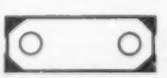
Single Notched Double End Hammer hardened, not hardfaced.



Single Notched Double End Hammer with hardfacing.

Notched Hammer hardened, not hardfaced.

Notched Hammer with hardfaced ends.



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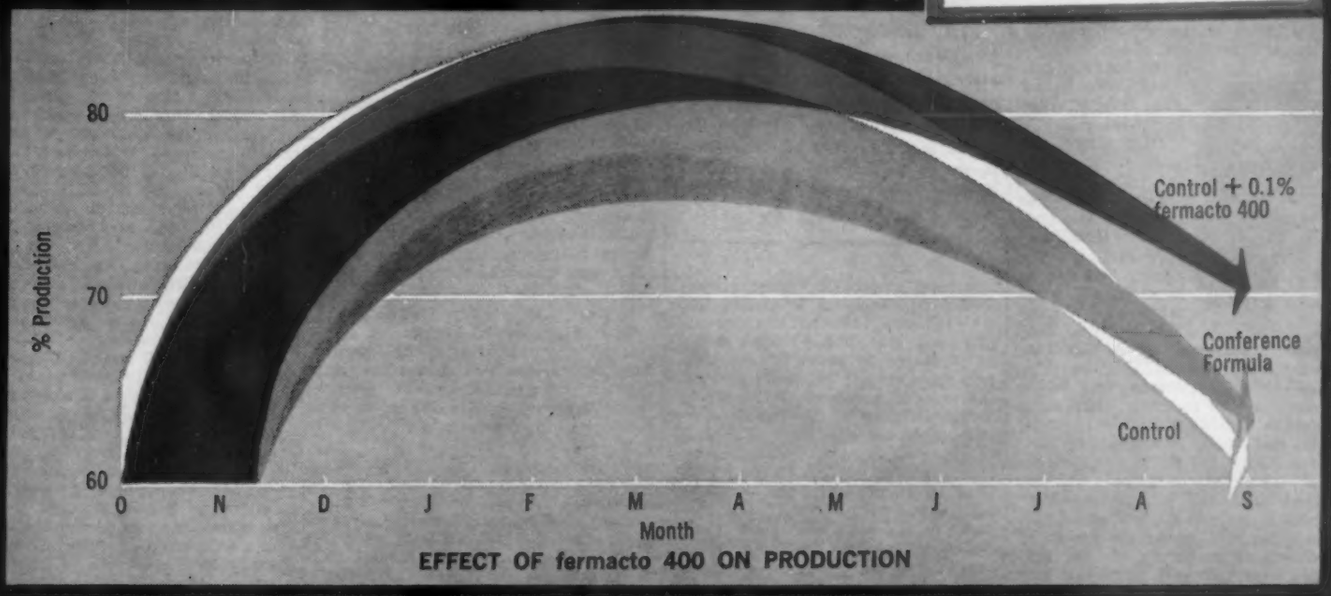
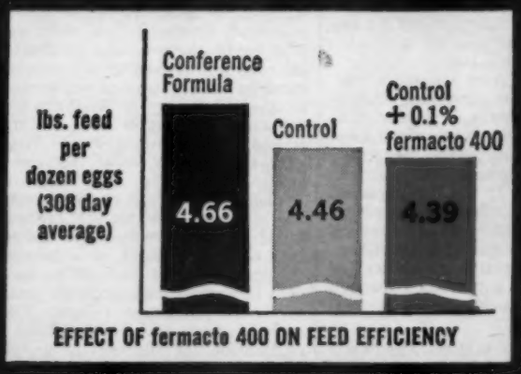
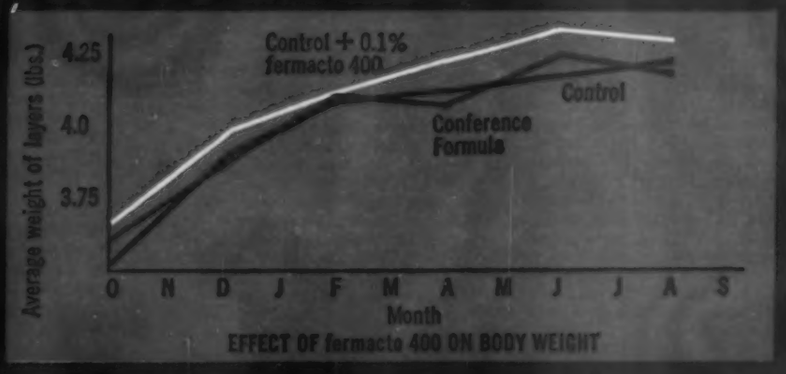


EFFECT OF fermacto 400 ON PRODUCTION



EFFECT OF fermacto 400 ON FEED EFFICIENCY



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A Report on Annual Meeting of Poultry Section, Association of Southern Agricultural Workers

By Dr. J. R. Couch
Texas A&M College

A total of 31 papers was listed on the program of the annual meeting of the poultry section of the Association of Agricultural Workers Feb. 1-3 in Birmingham, Ala.

Dr. J. R. Couch

Of these 29 came from state universities and agricultural experiment stations, and two from commercial laboratories. The states represented were Alabama, Arkansas, Georgia, Louisiana, Texas, Tennessee, Mississippi, North Carolina, South Carolina and Virginia. The commercial laboratories from which reports on the program came were Peterson Breeding Farm, Decatur, Ark., and Chas. Pfizer & Co., Inc., Terre Haute, Ind.

A wide variety of subjects was discussed, including poultry nutrition, genetics, physiology, endocrinology, marketing, the poultry curriculum in a college or university training program, management, extension programs and anthelminthics and treatment of poultry litter for fertilizer purposes. Papers thought to be of interest to the feed industry will be reviewed in some detail below.

COLLEGE AND INDUSTRY COLLABORATION—J. R. Hubbard, Jr., extension poultryman, Alabama Polytechnic Institute, presented a paper on "Suggestions for Improving the Extension Broiler Program from a Study of Broiler Integration in Alabama." The study was made in the broiler producing counties of Alabama. Groups involved included broiler contractors, farmers and county agents. Opinions concerning extension education were obtained from 259 broiler farmers, 22 county agents and 31 contractors. Conclusions given by Mr. Hubbard are stated below.

1. The extension broiler program should be channelled through both the county agent and business firms of the poultry industry. For the best educational efficiency with vertical integration, the extension broiler program must be coordinated with business firms at the state and county level.

Example: Area servicemen's schools should be planned on the area level to meet the needs of the area's current broiler problems. This planning is to be done by county agents and broiler contractors of the area.

EDITOR'S NOTE: In this report, Dr. Couch summarizes poultry research papers presented at the annual meeting of the Association of Southern Agricultural Workers. Dr. Couch is a professor in the departments of poultry science and biochemistry and nutrition at Texas A&M College, College Station.

Subject matter for these schools should be developed in cooperation with industry, research, teaching and extension. This subject matter should be presented by personnel of industry, research and extension to meet the pressing problems of the broiler industry. Ways for solving the current problems studied in the area servicemen's schools should be carried to broiler farmers on the county level by county extension personnel and servicemen of broiler contractors.

2. Since many of the broiler farmers' management decisions are made by contractors, research and extension must be alert to assist the top executives of business in developing and executing the best programs for broiler production and marketing.

3. A combination of all extension methods should be used in carrying out a broiler program. But the major emphasis should be placed on the use of letters, meetings, bulletins and visits.

4. Broiler farmers felt that extension should place major educational emphasis on management problems including disease prevention and control, kinds of broiler contracts offered, building and equipment needs and outlook information.

5. Extension should concentrate on the subject matter that can best be taught through our educational methods, and let business perform the service-type work.

6. Evaluation of our extension education at the county level should be given more attention by leaders in the poultry association. The extension service also should have an advisory committee from the Alabama Poultry Industry Assn. at the state level. This committee should represent all segments of the poultry industry and assist the extension poultry specialists with the evaluation of extension education progress. This committee also should serve to help coordinate poultry production and marketing recommendations with extension education and the poultry industry.

7. Since orderly production and marketing of broilers is one of the problems of the broiler industry, the extension service can assist the poultry industry with an educational program on this problem.

8. The extension service has a challenge to keep up to date with research on broiler marketing, merchandising and new methods of cooking broilers and assist the poultry industry in getting this research applied. This includes an improved consumer educational program.

9. Since the poultry industry showed a preference for poultry information in printed form, the extension poultry specialist should have a regular publication to keep the poultry industry up to date on the latest research and developments in the poultry field.

10. Our land grant college and extension service should develop better in-service training on all phases of poultry production and marketing in order for extension workers to be qualified to furnish the educational leadership for the broiler industry. Several broiler contractors also stated that county extension workers should be better informed on the entire economic picture of the integrated broiler industry.

It is apparent from the above that poultry extension personnel, including county agents and broiler contractors, must coordinate recommendations for management practices, vaccination programs and nutrient levels in feeds. It also is apparent that the top management personnel in the broiler contractor organization must agree with and approve recommended procedures. A great deal of progress can be experienced through such a coordinated extension program.

POULTRY CONDEMNATIONS—Dr. Arthur T. Ringrose of Virginia Polytechnic Institute discussed poultry condemnations and emphasized the importance of the grower, the serviceman, the contractor and the processor working as a team to decrease serious losses which have been experienced through such condemnations. Dr. Ringrose's paper is given in detail.

U.S. mandatory inspection became effective in poultry processing plants Jan. 1, 1959. Condemnations of all poultry carcasses unfit for human food are made by federal inspectors in all poultry processing plants which move their processed product in interstate commerce.

Inspection of poultry plants and their products during processing is not entirely new to many areas, since voluntary poultry inspection programs had been under way under voluntary federal-state inspection procedures for some time previous to Jan. 1, 1959. Mandatory government inspection, however, made official the rigid quality standards that have been incorporated into modern poultry processing methods. Since it came into use, it has served to emphasize some of the reasons why broilers and other poultry are condemned during the inspection process.

The results of first year's operation under this mandatory program show condemnations close to 90 million lb. with a total value of nearly $22 million. The average loss in percent condemnations in all U.S. plants has been under 2% of all poultry delivered. Many records are found where condemnations in individual flocks run to 4-6%, and cases of 10-15% are not unusual, with an occasional report up to 25%. Each flock report of condemnations is a record of the management and practices exercised by the grower, serviceman, contractor and processor.

As an example of costs in Virginia, one contractor's 1,419 flocks produced 21,616,104 lb. of broilers in which the condemnation cost was .13¢ lb. of live broiler sold—a total cost of $28,419 between Jan. 1 and Aug. 31, 1959, sold to 10 processing plants. The range in condemnation cost was from .01-.41¢ lb. of live broiler sold. This whole operation functioned under one set of management practices and was generally considered to have average or better management supervision.

Costs to the industry frequently amount to ¼-1¢ lb. of all poultry processed. Previously, all costs were paid for by the processor as processing costs but showed up in lower payment to the producer or higher costs to the consumer. In Virginia first, and some other states later, all farm-caused condemnations were charged back to the producer at the time of plant payment. In some states, all condemnations, plant or farm-caused, are charged back to the producer. Since the condemnation was a direct cost to the producer, it emphasized the importance of undertaking measures to reduce condemnations resulting from whatever causes. These measures call for the reduction or elimination of disease in growing flocks and improvement of management practices at the farm level.

Condemnations due to plant causes can also be reduced by greater emphasis on improved loading and hauling methods, increased control and supervision of personnel and machinery at the plant level.

It is clear that the industry cannot stand a loss of $22 million annually, especially when it is quite apparent that there is something that can be done about it.

In Virginia, work was undertaken by the specialist, with the cooperation of agents, as rapidly as these prob-

INFORMAL GATHERINGS AT ILLINOIS EVENT—In the first picture, Dr. H. M. Scott (second from left), University of Illinois poultry researcher, discusses amino acid requirements in poultry rations with three representatives of Dawe's Laboratories, Chicago, at Illinois Feed and Nutrition Conference Feb. 4-5. The Dawe's representatives are (from left): Murray J. Smidt, James C. Fritz and M. M. Bacharach. The second photo shows several speakers, who appeared on the conference program, chatting before giving their talks. They are (from left): Sitting—Dr. H. H. Draper, Illinois animal nutritionist; R. O. Nesheim, Quaker Oats Co., Chicago; Dr. Burr Ross, head of the University's department of animal science; standing—Prof. K. E. Harshbarger, dairy nutritionist; C. L. Davis, dairy scientist, and Dr. F. A. Kummerow, food chemist, all of the university's staff. The third group includes (from left): Dr. Joseph Kastelic, head of the nutrition division in the University of Illinois department of animal science; Dr. M. W. Pasvogel, Peter Hand Foundation, Chicago; W. Keith Walker, Good-life Chemical, Inc., Effingham, Ill., and Vince Nielsen, Midwest Dried Milk Co., Dundee, Ill.

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lems could be identified. They were emphasized to various segments of the industry. Poultry servicemen's meetings were completed with U.S. Department of Agriculture and extension personnel leading the discussions. A processor-sponsored dinner meeting for feed company-broiler contractors, large growers and servicemen reached key people in most poultry areas. Several producer meetings were accomplished.

Inspection at poultry processing plants has pointed out problems previously unrecognized by producers and has opened the way for an entirely new emphasis on poultry management. It is the function of the extension specialists to carry through with the county agent to every producer such facts as may be pertinent; and it is an opportunity to drive home again all the sound practices involved in proper poultry management to rear healthy poultry for market. In so doing, every level of management must be involved including head of company, serviceman and many other agencies.

TOXIC SEEDS—Dr. Bert W. Bierer, poultry department, Sandhill Experiment Station, Clemson Agricultural College, South Carolina, presented an extensive series of investigations on a comparison of the toxic effects of Crotalaria Spectabilis, Crotalaria Striata and other weed seeds. Crotalaria Spectabilis caused mortality in sheep, cattle, swine, poults and chicks when fed at a level of 5%. Chicks fed at a level of 1% and .1% also experienced mortality and severe growth depression. As little as .2% lb. per ton may interfere with growth in chicks. Hogs were reluctant to eat feeds containing 5%-1% respectively, although a 90-day feeding period with a level of .1% did not appear to be injurious to swine.

Crotalaria Giant Striata did not appear to be injurious to cattle, sheep or hogs when fed at a 5% level for periods of two-three months. This species of Crotalaria did have a growth retarding effect and produced water belly in chicks and poults at the 5% level. A toxic effect with chicks was also observed at the 1% level but appeared to be harmless at the .1% level. Crotalaria seeds are often found in combine corn in South Carolina and bordering states and can be removed with No. 14 (14/16 inch) round hole screen.

It was rather interesting that the condition caused in chicks and designated by Dr. Bierer as water belly was very similar to the "X Disease" caused by toxic fat in a large number of instances a couple of years ago.

WATER RESTRICTION IN CAGE LAYERS—J. G. Goodman, professor in the department of poultry husbandry, Auburn University, studied the effect of restricting the water intake of caged layers. The overconsumption of water by caged layers during periods of high temperature has been thought to be one of the causes of wet droppings.

The study reported by Prof. Goodman was carried out in July, 1959, with three lots of 20 hens in back-to-back individual laying cages. No water was available from 4 p.m. to 7:45 a.m. during each 24-hour period in the three test lots. Hens in lot 1 were allowed water 15 minutes during each hour for the period beginning at 7:45 a.m. and ending at 4 p.m. Hens in lot 2 were allowed water for a 15-minute period every two hours and in lot 3 for a 15-minute period every three hours. The control group of birds was allowed access to the water 24 hours each day. No noticeable changes were observed in the birds on the various restricted water programs. The egg production for each lot was as follows:

Lot 1 (15 minutes per hour water allowance), 67%; Lot 2 (15 minutes water allowance every two hours), 73%; Lot 3 (15 minutes water allowance every three hours), 68.7% and the control lot (continuous water allowance), 71%. The droppings from the hens with restricted water periods were drier than those from the controls.

The best method that the author has found for the control of wet droppings is that of using the antifungal agent, Mycostatin. The latter has been used with success in stopping wet droppings in a number of states in this country as well as Europe and England.

RESTRICTED FEEDING OF CAGED LAYERS—This paper also was presented by the poultry husbandry department of Auburn University. Laying hens were restricted to from 90-95% of normal feed consumption after reaching 70% production. The duration of the study was one year. Restriction of the feed intake decreased the weight gains and resulted in a saving of as much as .4 lb. of feed per dozen eggs. Very little or no difference in egg production was recorded for any group.

The practicability of this type of study would appear to the writer to be that of preventing feed wastage in the cage layer operation. It was apparent from the study that birds fed on a restricted basis (90-95% full fed) produced approximately the same number of eggs, weighed less, and the procedures resulted in an over-all saving of .4 lb. of feed per dozen eggs.

The writer has had extensive experience in feeding cage layers synthetic type diets, and the birds were fed only once per day. The practice of leaving feed troughs full continuously results in appreciable losses in billing out of the feed.

DIETARY CALORIE AND PROTEIN LEVELS IN STUDIES WITH LAYING HENS—Results from this series of studies were presented by Dr. J. H. Quisenberry, head, department of poultry science, Texas A&M College System.

Dr. Quisenberry reviewed previous work on optimum protein levels for laying hens. Data have been presented before the annual meeting of the Poultry Science Assn. and have been published to the effect that 13% protein is adequate for laying hens. The feed industry has been reluctant to accept the lower protein level on a

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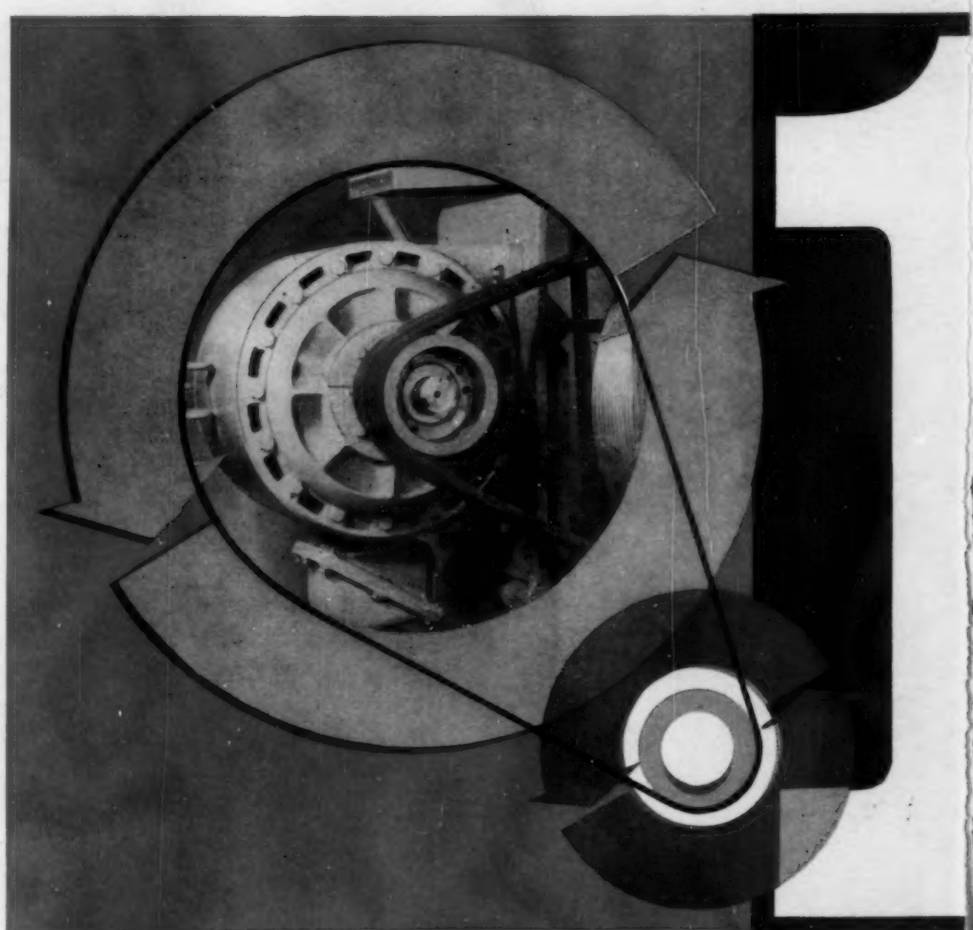

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practical formulation basis. Levels of 13, 15 and 17% protein were fed to laying hens maintained in cages. One percent fat was added to all diets. There were three replicate groups on each level of protein. The fat was increased to 5% in one replicate at the beginning of the fourth month and in another at the beginning of the sixth month. Twenty percent ground yellow corn was used in all diets. Ground milo and soybean oil meal were used to adjust protein levels. Other ingredients used included poultry by-product meal, dehydrated alfalfa meal, dried whey, fish solubles and an antibiotic fermentation residue, vitamins and minerals. The vitamins added to the various diets included riboflavin, calcium pantothenate, niacin, choline chloride, vitamin B_{12}, vitamin A and vitamin D_3. The diets also were supplemented with bacitracin and penicillin, each at the 10 gm. per ton level.

Results—The 13% protein diet failed to maintain body weight and markedly lowered egg production and egg size. The 17% protein diet increased egg production, egg size and feed efficiency over that of hens fed the 15% protein formula. When the energy content of the formulas was increased through the addition of fat, as mentioned above, there was an increase in the body weight of the birds, but no effect was observed on the rate of production, egg size or feed efficiency.

Dr. Quisenberry stated that the differences obtained in this study justified the conclusion that in order to obtain maximum performance, a level of 17% protein should be used in laying feed formulations, if optimum performance is anticipated. It should be pointed out that, in all studies with laying hens, protein is supplied to meet the amino acid requirements of the birds. Milo was used in these formulas. This ingredient contains a higher level of protein than does corn, therefore, a diet composed largely of corn and soybean oil meal would contain a higher level of soybean oil meal to attain the specified level of protein than a similar one made up of milo and soybean oil meal. This matter was discussed during the presentation of the paper. It should be emphasized that Dr. Quisenberry's conclusions were based on the results obtained under the conditions of experiments conducted at College Station, Texas, and with the formulation of the experimental diets used.

CORN VERSUS MILO IN CHICK DIET—Dr. E. L. Stephenson, University of Arkansas, reported on a series of four-week chick experiments in which corn was compared with milo.

Broiler diets for chicks were formulated with the cereal portion of the diet (58.6%) supplied in the following manners: 1. all corn, 2. all milo, 3. two thirds corn and one third milo, 4. one half corn and one half milo, 5. one third corn and two thirds milo.

The diets were fed both in pelleted and mash forms in experiment 1. In experiment 2 all diets were pelleted and fed both with and without a supplement of 10% DL methionine. The experimental diets were fed to day-old White Cornish X White Plymouth Rock chicks, with each diet being fed to three pens of 10 chicks each. The birds were maintained in battery brooders and each experiment conducted for a duration of 28 days. An analysis of the data obtained indicated that when fed in mash form corn was superior to milo. There were no significant differences between the diets which contained corn and the diets which contained various combinations of corn and milo. When the diets were pelleted there were no significant differences between any of the diets.

The addition of DL methionine, likewise, did not elicit any significant differences either in growth rate or efficiency of feed utilization.

It is apparent from these results that, unless the formulas are pelleted, it is necessary to use some corn along with the milo in a formula for chicks for optimum results.

Attention is directed to an earlier study carried out by Dr. Robert H. Harms, Dr. J. H. Quisenberry and the writer and published in Poultry Science to the effect that an all milo diet produced somewhat inferior results in broiler studies to one containing all corn or various combinations of corn and milo. It was interesting to see in Dr. Stephenson's experiment there were no significant differences between the average weights of the chicks fed the various diets if the diets were pelleted. A great deal of research has been conducted over the years whereby pelleted feeds have been compared with mash feeds. More recently, positive data have been obtained showing the effect of pelleting on improving performance with a small increase in weight and feed conversion when the feed formula was pelleted. It is possible that the pelleting process may improve the digestibility of the milo.

ANTIBIOTICS—A report was made from Virginia Polytechnic Institute in which the effect of zinc bacitracin on egg production and egg shell quality was determined under field conditions.

A field experiment involving over 2,000 layers was conducted to determine the effect of zinc bacitracin on egg production, shell quality, yolk mottling and mortality from the 10th through the 14th month of production. Duplicate lots of Leghorn-type hens of the same age and strain were placed into similar pens in the same house on each of three farms. Management of the birds at each farm was the same except for the addition of 20 gm. of zinc bacitracin per ton to the feed fed to one lot. A sample of 7 doz. of eggs was obtained from both pens on each farm just before the experiment and every 28 days thereafter for determination of shell thickness and the amount of yolk mottling.

This experiment revealed no significant difference for percentage egg production, yolk mottling and mortality between the flocks receiving

(Turn to page 32)

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Mr. Wendell Peterson is a progressive hog producer living near Radcliffe, Iowa. He believes in records . . . acts on what they tell him. Recently, Mr. Peterson had a chance to see how AUREOMYCIN® in feed cuts costs when fed at every stage of production.

Mr. Peterson kept records of an experiment conducted on his farm to determine the value of feeding AUREOMYCIN in a multi-stage program. This was one of 7 experiments conducted in Iowa involving 176 sows and their litters totaling 1523 pigs.

Here are the figures

26 sows and their litters were involved in the experiment. One group of sows and their litters received AUREOMYCIN in feed from start to finish. Another group received no AUREOMYCIN.

Result: One more pig was weaned from every two sows in the group fed AUREOMYCIN and the pigs averaged 6 pounds more at weaning. Mr. Peterson reduced his cost per pig weaned!

Result: After weaning, the group fed AUREOMYCIN (at a level of 50 grams of AUREOMYCIN per ton of feed) up to 75 pounds — showed a 26% higher average daily gain and a 13% greater improvement in feed efficiency than the control group.

CPA is a 9" by 14" folder. It opens into a desk portfolio or wall chart. Pockets are provided for bills and receipts. Two complete sets of record sheets for all stages of hog production are included.

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WHAT'S YOU COST PER PIG WEANE

If you don't know, you
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and reduce all costs at all

Written records beat memory! *Seeing* in words and figures how you operate is essential to good management at *any* time—doubly so when hog prices dip low. Then you really must know *all* your costs—find ways to reduce or eliminate some of them—keep watching the ratio between outgo and income. CPA helps you do just that.

What is CPA?

Cyanamid Production Accounting is a 9" by 14" folder which opens for use as a desk portfolio or wall chart. Two complete sets of records are included for all stages of production. These record sheets, when filled out by you, *may give you many surprises!* They tell you facts about (1) Cost of feed at all stages (2) Production of each individual sow (3) Cost per pig weaned (4) Dates and numbers of pigs started and finished (5) All in addition to feed (6) return.

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CPA is a handy 9" by 14" folder. It opens into desk portfolio or wall veterinary and miscellaneous bills and includes record sheets for post sow production, dates and number of pigs started and finished, costs i

HOW CPA AIDS YOUR HOG FEEDING PROGRAM

Feed manufacturers who provide their customers with CPA–Cyanamid Production Accounting–say this unique service shows advantages of using formula feeds.

Many thousands of hog producers have already started putting their CPA records to work. They're getting cost facts, evaluating them, acting upon them. More farmers will be doing the same thing as Cyanamid continues to promote CPA in advertisements like the ones shown.

Keeping accurate records is essential to good management at *any* time–doubly so as hog prices dip low. When you provide your customers with CPA you render a service that encourages a more efficient hog operation. You can point out to customers how the facts learned from CPA will *demonstrate* the economy and efficiency of your own feeding program with formula feeds. You'll build more good will, keep sales volume up at a time when hog raisers are most concerned about costs.

CPA is available to hog producers only through feed manufacturers and feed dealers. If you have not yet ordered your supply of CPA, get in touch with your Cyanamid representative who can tell you how to use CPA to your best advantage. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

Fed during the gestation, farrowing and lactation periods, AUREOMYCIN guards the health of sows and their litters. AUREOMYCIN, at recommended levels, also aids in eliminating the carrier stage of leptospirosis.

Starter pigs have minimum trouble with scours, atresses and "subclinical" diseases when fed AUREOMYCIN. They don't waste feed fighting disease – but use it to put on gains. You save and wean more pigs ... and that reduces cost per pig.

Growing-finishing hogs on feed containing AUREOMYCIN are protected all the way against atrophic rhinitis and cervical (jowl) abscesses. They use feed more efficiently during period when feed costs are highest. Result: maximum gains, at minimum cost. And hogs finish earlier.

How Aureomycin cuts costs, too

You may use CPA successfully, even if you don't have AUREOMYCIN® in your hog feeds. But many farmers who have kept similar records have proved to themselves that AUREOMYCIN is a big, cost-reducing factor in their programs.

These farmers paid a small extra amount to have AUREOMYCIN in feeds yet *found that this antibiotic far more than paid for itself in reducing costs at every stage of production.*

Recent controlled experiments on 7 farms in Iowa (involving 176 sows and their litters totaling 1523 pigs) revealed remarkable results when AUREOMYCIN was fed in a multi-stage program–from sow through starter and growing pig to finishing hog. These experiments showed that AUREOMYCIN helped save more pigs, wean more pigs, get more pigs to market on less feed–and returned $3.65 for every $1 invested in AUREOMYCIN.

Multi-stage program starts with the sow

AUREOMYCIN fed to sows during gestation and lactation helps maintain their health and the health of their litters. Because you raise more pigs to weaning, you reduce your cost per pig. Feeding AUREOMYCIN, at recommended levels to breeding stock, also aids in eliminating the carrier stage of *leptospirosis.*

2nd stage: saving young pigs

Every pig saved is a cost reduced. That's why you continue cutting costs by putting your young pigs on starter feeds containing AUREOMYCIN. AUREOMYCIN provides extra protection against scouring, stresses and invisible sub-clinical diseases that use up feed energy. You save more pigs, have more uniform pigs and fewer runts. Your pigs put on as much as a pound a day right up to weaning.

3rd stage: less cost per pound of gain

AUREOMYCIN keeps your growing pigs gaining fast at less cost per pound of gain. How? By guarding against infectious enteritis and atrophic rhinitis and by controlling unseen, sub-clinical diseases. Pigs don't *waste* feed fighting disease – they use it to stay healthy and put on maximum gains. You save feed, time and labor–and reduce medication bills.

4th stage: save on feed when it costs most

Finishing hogs eat *most* and your feed costs are *highest.* To keep your costs down, hogs must use their feed *efficiently* to put on top gains. When you continue to feed AUREOMYCIN all the way through you can expect all these advantages: (1) Up to 40 pounds of feed saved in the finishing stage alone (2) Continued protection against sub-clinical diseases and clinical diseases such as jowl abscesses (3) Vigorous, uniform, better-appearing hogs ready for market 2 to 3 weeks earlier.

Talk to your feed manufacturer

Many feed manufacturers and feed dealers offer feeds containing AUREOMYCIN for a multi-stage program – gestation, farrowing, lactation, starting, growing and finishing. See your feed man and get details. And ask him for your free CPA record. American Cyanamid Company, Agricultural Division, New York 20, N.Y.

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medicated feed and those receiving non-medicated feed. A significant difference in shell thickness in favor of the birds fed zinc bacitracin was found on one farm but not on the other two.

The data also showed a highly significant difference in percentage egg production, shell thickness and yolk mottling between 28-day periods. Egg production was highest in June and July during the first part of the trial and lowest in September and October, and egg shells were thinnest in July and thickest in September and October. Differences in yolk mottling, however, showed no consistent time pattern. A significant farm x period interaction indicated that the decline in egg production differed on the various farms.

This experiment would indicate that, under typical field conditions, it is not practicai to feed zinc bacitracin in the amount used in this test to layers during the last part of their first laying period to improve production, reduce mortality, increase shell thickness or reduce yolk mottling.

Repeatedly, it has been emphasized by the writer that antibiotics will not produce a beneficial effect on egg production unless a "disease level" is present in the birds. Such did not appear to be the case in the experiment reported. The writer continues to recommend the use of antibiotics in laying feeds.

ANTIBIOTIC POTENTIATION—A great deal of interest has been exhibited during the past few months in the field of the potentiation of broad spectrum antibiotics. Methods of potentiating have included the addition of terephthalic acid to the diet and lowering the calcium level to .2-.35%. Dr. A. A. Camp, superintendent of Texas Agricultural Experiment Station No. 21, Gonzales, Texas, presented a study in which soft phosphate was used as a potentiating agent for the broad spectrum antibiotics. Dr. Camp stated at the onset that this study was initiated as the result of a report by Dr. A. B. Watts, poultry department, Louisiana State University, Baton Rouge, La., to the effect that the availability of calcium in soft phosphate was lower than that in dicalcium phosphate. Thus it occurred to Dr. Camp that soft phosphate might be used in place of a portion of the phosphorus supplement in the standard broiler feed and thus increase the broad spectrum antibiotic level in the blood. A series of papers was presented before the poultry section of the Southern Agricultural Workers Assn. in 1959 concerning the use of soft phosphate in feed formulas for various types of poultry. The results from Dr. Camp's study are given below.

Increasing the blood-level of antibiotics in poultry through the use of various ways and means is a relatively new, interesting and significant field of research. The use of terephthalic acid and low calcium levels in the feed has proven to be a satisfactory means of potentiating certain antibiotics. Certain chelating agents have been employed with varying results. The work to be summarized in this paper was stimulated by the findings of Dr. Burl Watts, Louisiana State University, which indicated that hens fed a known and constant level of calcium retained approximately 53% of this mineral when supplied as dicalcium phosphate and only about 28% when it was supplied from soft phosphate. This suggested to the author that a source of soft phosphate might, therefore, be used as a potentiating agent for antibiotics.

A series of floor-pen and battery broiler tests were initiated to determine the antibiotic potentiating effect of varying levels of soft phosphate in the test diets. An all-vegetable type diet was employed in the first tests. In all other tests, dried whey and a fermentation product were substituted to all diets at 2½ and .5% respectively. The basal diet contained .115% phosphorus and .485% phosphorus was supplied by either dicalcium phosphate, soft phosphate, or a combination of the two. Calcium levels ranged from 1.30% to .60%. Diets were fed with and without TPA. Terramycin was added to the feed at a level of 200 gm. per ton in the first test and at 400 gm. per ton in all other tests. Growth rate, feed conversion and mortality data were obtained. Furthermore, blood samples were taken at either 2½, 4 and/or 8 weeks of age and terramycin blood levels were determined.

The results indicate that by substituting soft phosphate to the diet for dicalcium phosphate at gradient levels the blood level of terramcyin increases. The substitution of soft phosphate for dicalcium phosphate at a level which will supply .243 to .485% phosphorus resulted in a blood level of terramycin which was approximately twice the level noted when dicalcium phosphate was used to supply .485% phosphorus. This was true both in the presence and absence of TPA.

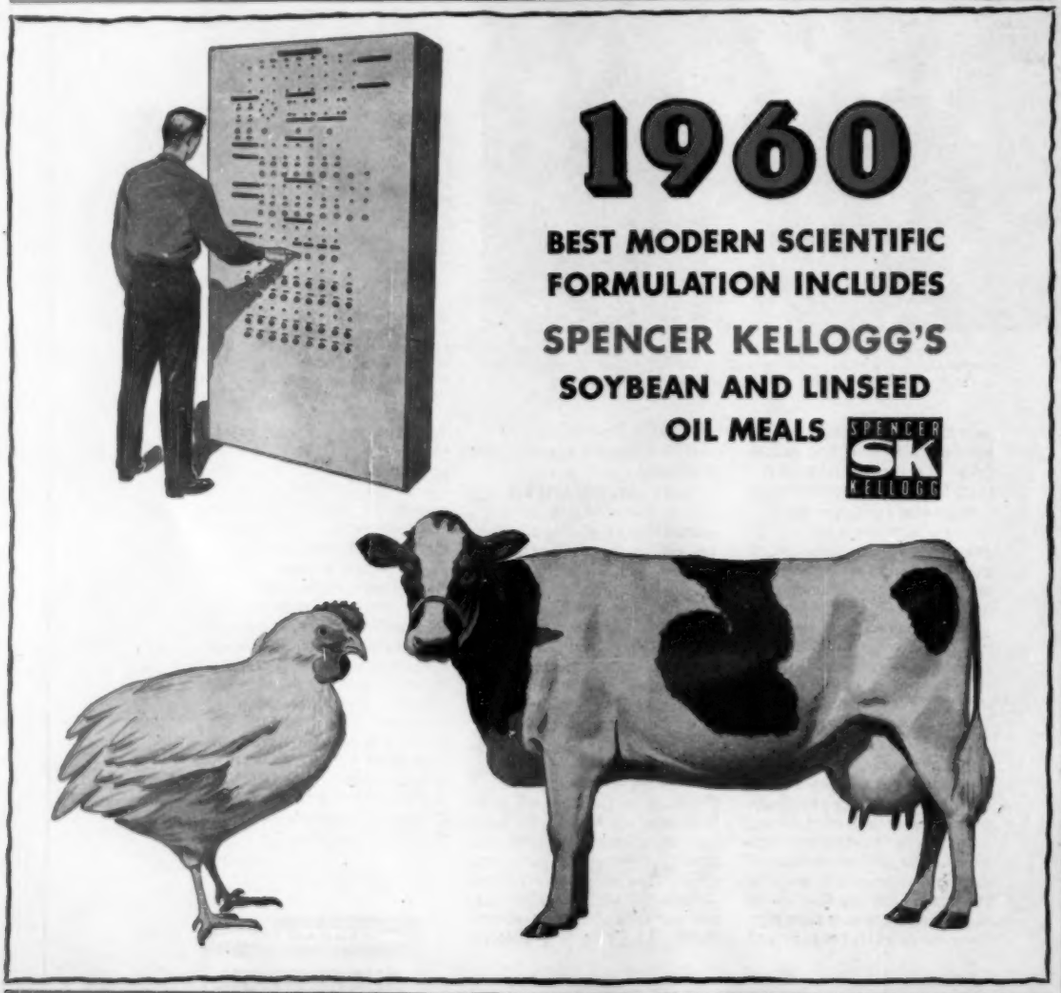
PROTEIN AND ENERGY LEVELS FOR BROILERS—Dr. Clayton C. Brunson, poultry industry department, Louisiana State University, reported on the feeding of different levels of protein and energy and effects on carcass composition and growth rate in broilers.

An experiment was conducted to determine the effects of dietary protein and energy level on carcass composition and growth rate in broilers. The trial involved three levels of protein, i.e., 18, 22 and 26%. Each protein level was tested with three levels of energy, i.e., 700, 1,000 and 1,300 Calories productive energy per pound of ration. This gave a total of nine rations. Each ration was replicated twice.

A widely accepted commercial-type broiler chick was used in the study. Each lot contained 12 males and 12 females. The birds were weighed initially and each week thereafter. A random sample of six birds was taken at day old for analysis to determine initial body composition. Each week as the birds were weighed one male and one female from each lot were taken at random for chemical analysis.

Results at 4 weeks of age show that best growth rate was obtained on the 26% protein—1,000 Calorie diet. Poorest growth rate was obtained on the 26% protein—700 Calorie diet. Other diets were inter-

(Turn to MEETING, page 72)



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2. Send your entry along with your name and address to: "Name the Pup" Contest, P.O. Box 7791, Chicago 77, Ill.
3. Contest is open to everyone in continental U.S. except employees and families of employees of Foremost Dairies, Inc. and its Divisions, its advertising agency and its agents. Entries will be judged on originality, sincerity, and aptness of thought. Judge's decision will be final.
4. Each entry must be the original work of the contestant. No entries will be returned—no correspondence will be entered into. Duplicate prizes will be awarded in case of a tie. Winners will be announced at the 1960 American Petfood Institute Convention. All entries become the property of Foremost Dairies, Inc. Contest is subject to all state, local and federal regulations.
5. All entries must be postmarked by not later than midnight May 12, and received no later than May 16.

OFFICIAL ENTRY BLANK

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CHICAGO 77, ILL.

My name for the Weimaraner pup is_____

NAME_____ TITLE_____

FIRM NAME_____

STREET ADDRESS_____

CITY_____ ZONE____ STATE_____

Chickens—How You Gonna Keep 'Em Down on the Farm?

"How you gonna keep 'em down on the farm: For one thing, by taking advantage of all the methods 1960 offers for the production and marketing of high quality eggs."

By Dr. H. R. Bird
University of Wisconsin

EDITOR'S NOTE: One of the problems of major concern to midwestern feed men is that of retaining egg production in their areas. And, of course, what happens, or does not happen, in the Midwest is of importance to other regions. For these reasons, feed men will be interested in what a leading poultry scientist has to say on "how you can keep chickens down on the farm." The accompanying article is from a talk by Dr. H. R. Bird, chairman of the poultry husbandry department at the University of Wisconsin, at the North Dakota Poultry Industries convention in Fargo.

Americans are going to town, according to the census figures. Right now only 1 person in 8 in the U.S. lives on a farm. In 1950 it was 1 in 6, and in 1910 it was 1 in 3. Since 1950 the farm population has decreased by 3,900,000 people. This is a reduction of 15.5%.

American chickens, also, are going to town. They are becoming urbanized in large poultry population centers, attracted, perhaps, by better housing with insulation and fan ventilation, more convivial relations with their neighbors—one to every 1½ sq. ft., bright lights for 14 hours a day, good food—not at the super market—but at the super mechanical feeder, improved plumbing in the form of a mechanical pit cleaner and higher pay (maybe) for eggs produced in quantity at one location.

Not long ago a friend expressed the opinion that, in a few years, all the eggs consumed in Chicago will be produced around the edges of the city in huge egg factories, each comprising several hundred thousand hens.

How you gonna keep 'em down on the farm? Of course we could give the title of "Farm" to any establishment that keeps chickens, but this solution would hardly be satisfactory in North Dakota or Wisconsin where we have some definite pre-conceived ideas as to what constitutes a farm.

Why did my friend make such a seemingly radical prediction about the future of the chicken population? Perhaps he was influenced by recent statistics, such as the following: For the first three quarters of 1959, the nation's hatch of replacement chicks was down about 7%, but Wisconsin's hatch was down about 17%; September egg production was up one half percent for the U.S., but down 9% for Wisconsin. These figures might mean that Wisconsin, a farm flock state which produces eggs for out-of-state shipment, is losing out to other areas. But do these figures represent a trend? If we look back over several years' statistics we do not find such a trend. In 1950 Wisconsin had 3.6% of the laying hens and pullets in the U.S. In 1957, it had 3.8%. I assume that North Dakota also produces eggs for shipment out-of-state. In 1950, and again in 1957, North Dakota had very close to 1% of the egg-laying population.

If there is a trend for egg production to move closer to the cities, we will have to wait a while before the statistics show it.

Modern Technology

Undoubtedly my friend was also influenced by the belief that modern technology, which is essential to efficient production, is more applicable to large commercial flocks than to small farm flocks, and that the marketing of high quality eggs is greatly facilitated by very large production units near the consuming centers.

These beliefs are correct, and they concern factors that will surely help to determine where and how eggs will be produced in the future. But they are not the only factors involved.

The term "farm flock" conveys different ideas to different people. Some people, who haven't visited a farm lately, may think of 100 birds of mixed sex, mixed age and mixed ancestry, subsisting largely on grain and oyster shell and living in a 20 by 20 house with nothing much to stop the wind from blowing through the cracks except the mites that dwell therein. Such flocks and such houses are unlamented relics of the past.

How Big?

I don't know how big a farm flock has to be for the sake of efficiency. I know that 100 is too small, and I think that 300 is too small. Somewhere above 300 there is a minimum size for efficient operation. The minimum is probably not the same for all types of farming operations.

Let me give you some specific examples of farm enterprises that we are proud to have in Wisconsin. Example A is a 240 acre farm operated by a couple, their three daughters and a hired man. The dairy herd is the major enterprise, but there is also a pork production project, 1,600 layers in floor pens in a two-story house and a hatchery.

Example B is an 80 acre farm operated by a father and son. The dairy herd is the principal source of income, but there are a thousand layers, and there is a small hatchery. The layers are in floor pens, partly in a conventional house and partly on the second floor of a barn.

Farm C is also operated by a father and son. They have 60 dairy cows and a capacity of 5,000 broilers.

Farm D is operated by a couple and their son. They have 40 or 50 dairy cows, feed out a load of steers and about 200 hogs every year, have 500 layers and a capacity of 10,000 broilers.

On Farm E, a couple and their son have 60 cows, 800 layers and a capacity of 8,000 broilers.

Marketing Program

As for marketing, it is certainly easier to develop a good marketing program for large flocks near the consuming center than for widely scattered small flocks. One has to choose between transporting eggs from farms to city and transporting grain for poultry feed from farms to city. The latter choice may look easier, but it necessitates finding a way to dispose of manure, and it requires a greater proportion of hired labor than does the farm poultry operation. Even a fairly large farm poultry operation, properly mechanized, can be carried on by family labor.

During recent periods of very low egg prices, there seemed to be even more distress in the commercial egg-producing areas near population centers than there was among owners of farm flocks in the Midwest. Last year I visited one such commercial area in the East. I was not surprised to learn that all the feed was imported into the area, but I was surprised to learn that there was not sufficient agricultural land in the vicinity to use the manure. Poultry houses were cleaned by hired cleaning crews, which were paid to haul the litter out in the woods.

How you gonna keep 'em down on the farm? By developing farm poultry enterprises that can compete with the large commercial operations. They must compete in terms of efficiency of production and in terms of quality of product.

The farm poultry enterprise in the Midwest has had, and still has, two big advantages: Namely, homegrown or locally grown grain and a home grown labor supply. These same advantages are important in turkey production, too. No other part of the country seems to be threatening the position of the north central states in this field. On the contrary, these states are growing an increasing proportion of the nation's turkey crop.

Feed Cost

More than half the cost of producing eggs is feed cost, and almost half the feed cost is the cost of grain. So grain represents about one fourth the cost of egg production. Is there any more efficient way of meeting this one fourth of the production cost than by feeding the grain on the same farm or in the same community where it is produced?

People who say that modern technology favors the very large commercial poultry flock forget that some of this technology can be applied to good-sized farm flocks. They also forget that technology does not stand still. Who knows what developments will occur in the next few years to increase the efficiency of production in the grain belt?

A few years ago, the only well-established method of feeding layers in the grain belt involved feeding equal parts of mash and homegrown grain. If the mash was a commercial one, as it usually was, this meant that half of the diet was home grown. Now excellent commercial concentrates can be purchased and used as 25-35% of a diet containing 65-75% of home grown grain.

Feeding Combinations

The combination can be made in any one of the following ways:

1. The flock owner can install grinding and mixing equipment, buy the concentrate and make his own all-mash feed.

2. He can, in some areas, have a commercial portable feed mill come to his farm to do the grinding and mixing.

3. He can store his grain with a local dealer under a grain bank plan and have the dealer mix a mash for him.

4. He can haul his grain to town for grinding and mixing as needed.

5. He can provide for his hens whole grain and concentrate, free choice. This system works very well for some flocks and not so well for others; but it seems safe to say that as we learn to make better and better concentrates, this method will become more generally adaptable. However, it is obvious that all-mash is better for mechanical feeders and better from the standpoint of uniform egg quality.

Grain contributes more to the cost of the feed for layers than any other ingredient. Future improvements in feed formulation will lower costs of protein and vitamin supplements and make grain proportionately even more important as a cost factor. This will increase the relative advantage of those flock owners that can provide grain most economically.

Future Improvements

What will these future improvements in feed formulation be? We know that layers need only 12-13% of high quality protein rather than the 15-16% we now supply. We aren't ready yet to recommend a 13% protein formula, but it will come. Its development will probably be aided by use of small quantities of synthetic amino acids to improve protein quality. The needs for such amino acid supplements will have to be worked out separately for formulas based on corn or on barley or on grain sorghums or on still other grains. Low protein formulas will contain a higher proportion of grain than those now in use.

In recent years many advances in feed formulation have made it possible to furnish vitamins more economically. We haven't yet reached the end of these improvements. Every innovation that makes vitamins more economical increases the relative importance of grain as a cost item and thus increases the advantage of Grain Belt poultry and egg production over production in other areas.

Today corn is more palatable to

INDUSTRY TRENDS—Discussing feed industry trends in a panel discussion at the Washington State Feed Assn. convention in Yakima were these men. Left to right in the two pictures are Henry Fors, Fors Hatchery & Breeding Farm, Puyallup, Wash.; Dwight Howell, Centennial Mills, Inc., Portland; Lowell Judd, Albers Milling Co., Seattle; Len Hitchman, Ralston Purina Co., Seattle, the moderator; Oakley Ray, American Feed Manufacturers Assn., Chicago; William Udell, Ralston Purina Co., Portland, and M. V. Wolfkill, Wolfkill Feed & Seed Co., Monroe, Wash.

poultry, more digestible by poultry and a better energy source for poultry than any other grain, for reasons that are not entirely clear. Ways will be found to make other grains equal to corn in these respects, possibly by putting enzymes in feeds, or possibly by using other additives. Experiments in this field may even improve the palatability and utilization of corn itself.

Just as there will be changes in production technology, so also there will be changes in the technology of assembling and processing poultry and eggs. Must we anticipate that all these changes will favor the very large commercial flocks that are near consuming centers? To be sure it is easier to get high quality shell eggs to the consumer's table if the laying flocks are within a few miles of that table. It would be still easier if the hens and the consumer were only a block apart, and easier yet if a few hens could come into the consumer's kitchen each morning and lay their eggs right next to the frying pan. Of course, this last arrangement has some obvious disadvantages. But one encounters disadvantages which are not quite so obvious as soon as he starts moving the layers away from the grain source.

Maintaining Quality

Why must we think only of shell eggs for the consumer's breakfast? Is it not possible that there will be developed a method for processing eggs at country points in such a way that their eating quality can be maintained and they can be "reconstituted" to "strictly fresh Grade A large" in the consumer's kitchen? Why must eggs be transported, handled and sold only in spheroidal calcium carbonate containers when everything else comes in tin cans, plastic cartons, squeeze tubes, spray cans and zip-top boxes? It seems entirely possible that technological improvements will solve completely the problems of maintaining quality in eggs while they are on their way from farm to consumer.

In the meantime, how you gonna keep 'em down on the farm? For one thing, by taking advantage of all the methods 1960 offers for the production and marketing of high quality eggs. This includes selecting stock that is noted for quality as well as quantity production, feeding and managing in such a way as to encourage the production of eggs of uniform color, size and quality, frequent collecting and frequent marketing of eggs, and holding of eggs in a cooler at proper temperature and humidity between collection and marketing.

There are several strong influences that will keep chickens on diversified midwestern farms for some time to come. One of these is an economical and convenient supply of grain, which accounts for about a fourth of the cost of producing eggs. Future changes in technology of production are likely to increase the importance of this factor. Another influence is the availability of labor which can be used advantageously in a poultry enterprise. Still another influence, in my opinion, will be improved methods of getting high quality eggs from producer to consumer.

But now, perhaps, we should ask, "How you gonna keep 'em down on your farm?" Poultry and egg production are now highly competitive. Improved technology is no help to the man who doesn't use it. Instead it helps his competitors to put him out of business.

In 1959, Dickerson described to the California Animal Industry Conference some observations on the field testing of breeding stock. Chickens from the same matings were placed on 10 California farms in 1957. Laying house mortality varied from 6% to 27% among these farms. The number of eggs per pullet housed to 17 months varied from 152 to 247. Egg weight at 32 weeks varied from 22.7 to 24.1 oz. doz. Albumen height at 32 weeks varied from 70 to 79 mm. The number of eggs with blood spots varied from 2 to 5%. Let me repeat that these chickens were all from the same matings, but the management varied.

The advantages inherent in diversified midwestern farms will not, in themselves, keep poultry on your farm. To keep it there, you will have to make the most of these advantages and of every technological improvement that comes along.

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YOUR QUESTIONS ON VITAMIN D NUTRITION

Q: How can I be sure each pound of my feed has the same amount of vitamin D as the next pound will have?

A: Uniform distribution depends mainly upon the physical properties of the vitamin D concentrate, proper mixing methods and efficient equipment. By careful management, mixing, adequate for all practical purposes, can be readily achieved. The extremely small particle size and free-flowing characteristics of Fleischmann's FIDY Irradiated Dry Yeast help tremendously in getting good distribution.

Q: At what age of animal is vitamin D most important?

A: Lack of adequate vitamin D can be disastrous at most any age. Formerly, vitamin D deficiency was thought to occur only in young growing animals. Research has now shown that mature dairy cows need vitamin D. Difficulties from inadequate vitamin D have also been observed in older beef cattle, sheep and swine.

Q: Is there a relationship between the daily feeding of a higher level of vitamin D, 8,000 units per pound of feed or more, and the possible control of milk fever without having to feed the massive doses recommended for the short period before freshening?

A: Recent careful research provides reasons why benefits from year around feeding of higher levels of vitamin D might be expected. Older cows have previously unrecognized difficulties in absorbing and utilizing calcium. Extra vitamin D helps. The results of clinical and practical studies on the control of milk fever by fortifying regular dairy rations at higher levels are very encouraging.

Q: Does artificial drying lessen the vitamin D content of hay?

A: Figured on a dry matter basis, the vitamin D content of artificially dried hay is probably about the same as was in the green forage before drying. During field curing vitamin D tends to increase but the amount is not as great as commonly supposed. Reports on 13 samples showed an average increase of only 115 units per pound during field curing. Such an increase in vitamin D in a whole ton of hay would be worth only about ½ cent.

Q: What is the difference between brewers dried yeast and irradiated dry yeast?

A: Brewers dried yeast is a by-product from the brewing of beer and ale which is used in feeds mainly as a source of the B-complex vitamins and protein. FIDY Irradiated Dry Yeast is a primary grown yeast which has been subjected to ultraviolet irradiation under carefully controlled conditions to produce vitamin D_2. It is used in four-footed animal feeds solely as a source of vitamin D.

A. C. Wallis

For more complete answers to any of these questions write to Dr. G. C. Wallis, Director of Nutrition, Agricultural Department, Standard Brands Incorporated, 625 Madison Avenue, New York 22, N. Y.

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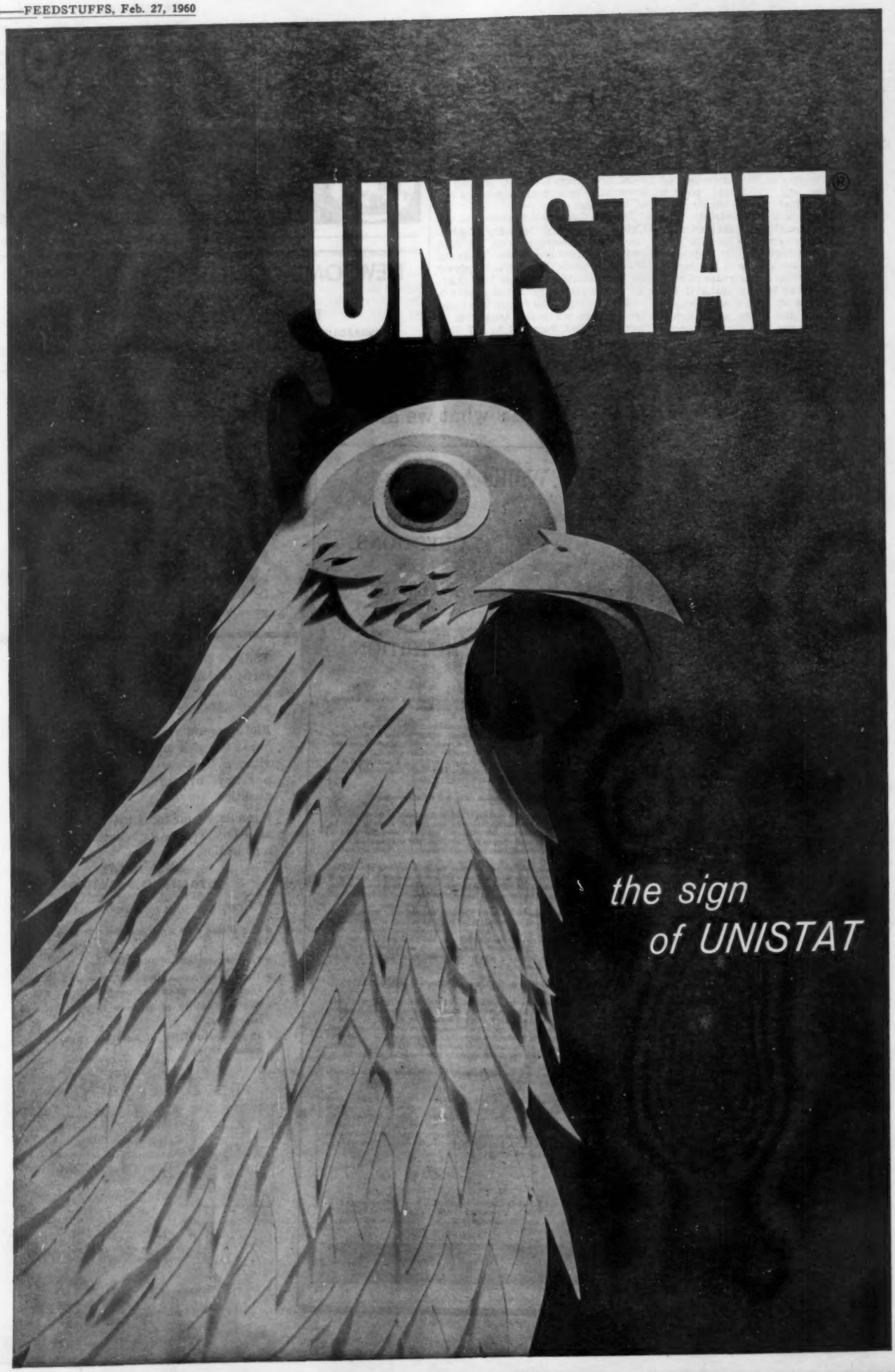
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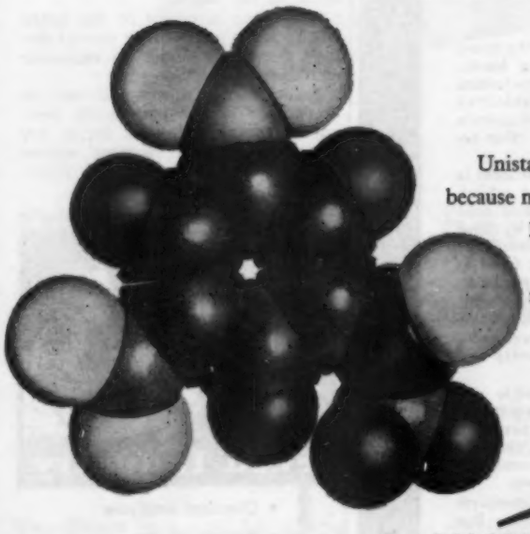

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Illinois Economist Gives Hog Outlook

URBANA, ILL. — An analysis of the hog situation and outlook has been issued by L. H. Simerl, department of agricultural economics, University of Illinois.

In the report Mr. Simerl cites figures indicating farmers are not holding back gilts for late spring farrowings.

He believes, on the basis of figures, that market supplies for the next four months will remain about the same as in 1959, when prices at terminal markets stayed near the $16 mark.

Mr. Simerl notes that the U.S. Department of Agriculture reported that farmers planned to cut 1960 spring sow farrowings 12% below those of 1959. Immediately thereafter, prices of feeder pigs and bred sows rose sharply.

"Since that time there has been much speculation about the outcome of spring farrowings," he said. Many believe that hog producers will not cut production anywhere near 12%. Some have said that there would be no cut at all and maybe even an increase.

Following is Mr. Simerl's analysis:

"In the first place, it is important to understand that the report of farmers' intentions is not a government forecast. USDA merely surveys hog producers' plans and reports them so that they can change their plans if they wish. If they are planning to raise too many pigs, it makes good sense to find out about it so that they can cut back a little. If they find that they are planning to cut too much, they can get their production on a more even keel.

"In the past, not many hog producers have taken adavntage of these opportunities. At the turning point in the hog cycle, they have often cut production more than the survey showed. This past fall furnished a good example:

"In September, farmers reported their intentions to cut December-February farrowings by 4%. In December, they reported that they were slashing those farrowings by 15%! At the same time, they said they planned to cut March-May farrowings by 11%.

"When producers got the news of the 15% slash in December-February farrowings, it was too late for them to make any substantial changes in plans for those months. They could, of course, have bred more gilts to farrow in April and May.

"The sharp rise in prices of feeder pigs and bred gilts in late December simply reflected an increase in demand. The increase in demand did not make any more hogs. It just boosted the price of those already on farms. Farmers who owned them suddenly decided that they were worth more. Farmers who wanted to buy raised their ideas about what they would pay.

"According to the December report, farmers in nine Corn Belt states had about 6% more market hogs over 6 months old on hand Dec. 1 than they had the year before. The commercial hog kill in December, however, was 19% above that of the previous year.

"The number of hogs 3-6 months old on farms Dec. 1 was reported to be only 2% above that of a year earlier. But slaughter in January was about 13% greater. These figures surely do not point to any holding back of gilts for late spring farrowing.

"The number of hogs under 3 months old on Dec. 1 was reported to be 3% less than last year. These pigs will begin to go to market in April.

"These facts point to about the same market supplies for the next four months as in 1959, when prices at terminal markets stuck close to the $16 mark."

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Oregon Association Nominates Officers

PORTLAND, ORE. — Alec Runciman, general manager, Webfoot Fertilizer Co., Portland, has been nominated president of the Oregon Feed & Seed Dealers Assn. for the 1960-61 term by the association's nominating committee. He is completing a term as association vice president, and, if elected, will succeed Fenn Emerson, Chas. H. Lilly Co., Albany.

Jim McDowell, McDowell Bag Co., Portland, currently secretary-treasurer, was nominated vice president, and Howard Jenks, Jr., Jenks-White Seed Co., Salem, was nominated secretary-treasurer.

Nominated for the board of governors are the following: Lloyd Asplund, Triangle Milling Co., Portland, to represent the Portland wholesale feed manufacturers; Dick Cook, Cook-Fredricks Co., Portland, to represent the Portland area jobbers; Harold Johnson, Tigard Feed & Seed, to represent the Portland area retailers; Russ Inman, Inman & Co., Portland, to represent the allied tradesmen; Bob Stoll, H. J. Stoll & Sons, Portland, governor-at-large. Fenn Emerson also was named to serve on the board.

Remaining members of the board will be made up of newly elected district governors of the six statewide districts.

Association members will vote on acceptance of the nominating committee recommendations during the annual convention business session March 18 at the Sheraton Hotel, Portland.

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Says Consumers Being Conditioned to Lower Egg Prices

BARRE, VT.—"The nation's consumers are being conditioned to expect lower, not higher, egg prices . . . and the industry itself is to blame," Richard I. Ammon, executive secretary of the Northeastern Poultry Producers Council, said at the annual meeting of the Vermont Poultry Assn. here.

"Piddlers, peddlers and poultrymen" are responsible for most of the current problems of the poultry industry, Mr. Ammon declared. He went on to pinpoint how the activities of each have added to the industry's woes.

The "piddlers," in the form of economists, trade journalists and self-styled industry spokesmen continually talk about how you must produce for less—how you must expect lower profits, Mr. Ammon declared.

"I think it's time these piddlers—who claim to be friends of our industry—become a little more discreet and tactful in what they write and say," he commented. "I think it's high time we stop conditioning the consumers' mind to expect lower and lower prices for poultry products."

The "peddlers"—those who sell to the poultry industry—"have contributed their share to the industry's ills by over-selling, encouraging unsound credit and by an over-devotion to the creed of 'volume for volume's sake,'" Mr. Ammon continued.

He pointed to NEPPCO's conference with officials of the nation's feed industry as tangible evidence that different segments of the industry can work together for the common good.

Poultrymen, themselves, are also at fault in the current cost-price squeeze, the NEPPCO official declared. He went on to detail some of the ways in which by carelessness, indifference, selfishness and "a stubborn refusal to work together," poultrymen are hurting themselves and their industry.

To illustrate his point, Mr. Ammon reported on NEPPCO's meetings with members of the New York Mercantile Exchange, Urner-Barry Co., and others to see what could be done to improve egg pricing practices in New York.

NEPPCO, like others in the industry, argued that the exchange quality standards are too low. "By raising these to realistic levels, prices in New York would not only go up, but would more accurately reflect the quality of the eggs being offered today," he said.

Egg Quality Survey

To back up their position on the issue, NEPPCO arranged for a survey of egg quality. Forty-three samplings were made at first receivers in New York, who reputedly handle top grade eggs. The survey showed that only 34% of the eggs, taken from all over the New York metropolitan area, could have passed the exchange's present standards of 60% grade A's and 10% double A's.

"This bears out the point that producers are simply not properly preparing their products for market," Mr. Ammon told his audience. "And they are not going to get a better price for their products until they do."

In his final points, Mr. Ammon was openly critical of the role of the U.S. Poultry & Egg Producers Assn. in the upcoming congressional hearings on poultry legislation, slated to be held later this month.

Can Expect Headlines

"The industry can look forward to the same type of sensational newspaper headlines that resulted from last summer's hearings," Mr. Ammon declared. "A few busloads of poultrymen will storm into Washington purporting to represent the entire poultry industry of the U.S. Although they label their goal as a 'self help' program, what they will be talking about is government controls."

The NEPPCO chief underscored the fact that NEPPCO's new "Project 65" is a "genuine self-help program for the industry, that does not require government help in the form of controls and supports to improve the industry's lot."

Mr. Ammon made a strong appeal for more active participation in state poultry associations and in the council. "It is this type of concerted action that will pull the industry out of its present depressed condition," he said.

R. E. Fiedler

ADM PROMOTION—Ray E. Fiedler recently was named manager of Archer-Daniels-Midland Co.'s soybean division. (Feedstuffs, Feb. 6.) Mr. Fiedler was executive vice president of Api-Aba, feed manufacturing affiliate of ADM in Mexico. Mr. Fiedler will make his new headquarters in ADM's general offices in Minneapolis.

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Hay and Grain Pellets, Other Feeds Produced in Texas Mill To Specification, for Own Use

By Lucille McCormick
Special Writer

A new feed mill—the first in this far western section of Texas—stands at Clint, about 25 miles from El Paso in the Rio Grande Valley. It is owned and operated by Howard Surratt and his two sons, Don and Bob.

The capacity of the mill is 15 tons per hour. The feed is sold or used as fast as it is produced. The Surratts produce mash and pelleted feeds, using barley, milo grain, cotton seed hulls, meal and alfalfa hay in various mixes.

Mr. Surratt recently signed a contract for three million tons of grain. It is stored in huge piles near the mill.

The Surratts are agents for the Ralston Purina Co., which furnishes the concentrate or premix for chicken feed, to which grain is added at the mill. They manufacture feed to specification for some of the local dairies, and they mix feed to any farmer's or rancher's formula, using his ingredients, if requested. Feed dealers also buy from the mill.

The Surratts' own feeding operation uses about 30% of the feed produced in the mill. They make their own cattle feed from the ground up, but they do use Purina premixes as a supplement in some of their feeds.

The customer may either pick up his feed order or have it delivered. The Surratts have two delivery trucks, an International diesel 44,000 and a Chevrolet Bobtail 16,000 which haul either bulk or sacked feeds.

Equipment, Flow

The mill has a Williamson & Son push-button feed mixing plant. Only four employees are needed at the present time to handle the operation, Mr. Surratt noted. The building is all-steel construction with concrete floors, the actual mill covering 6,000 sq. ft. of space and is designed for expansion. An all-steel warehouse, 40 by 80 ft., adjoins the mill. Across the road from the plant is the Surratts' 16 by 16 ft. stuccoed adobe brick office.

Aaron Foshee handles the push button control board and operates the mill. Cotton seed hulls are dumped into the truck dump pit at the north end of the mill and are moved by augers into a 60 ft. elevator which carries them into the hull bin.

Grain is dumped into the truck dump pit and moved by augers into a 60 ft. elevator, which lifts it to the 100-ton whole grain storage bins. The grain is augered from storage into a conveyor and into a 50 h.p. Miller grinder, then elevated to the working bins. When the bins are full, a horn sounds, and the control board operator turns the equipment off.

Minerals, vitamins and antibiotics are placed in a 3 h.p., 100-lb. mineral mixer by hand because of the small amounts used. Aureomycin is used in most cattle rations.

The micro-ingredient mixture is carried in a 1-h.p., closed inclined drag into the 1,000-lb. scale hopper above the batch mixer. Bulk ingredients also are fed into this scale hopper.

When the weight of the ingredients in the hopper reaches half a ton, the ingredients are dumped into a Williamson horizontal batch mixer of 1-ton capacity below the scale hopper. Weights of the ingredients are automatically printed on tape for future reference.

The mixed feed is elevated by a bucket elevator from the batch mixer and placed in one of three bins, depending on the type of feed being produced. On top of this elevator is a three-way valve which channels the feed into a pellet surge bin, or into bulk mixed feed bin or through the Williamson steam blackstrap molasses mixer, if molasses is to be used in the formula. Molasses can be blended into any feed with the mixer mounted above and to the side of the scale hopper.

A drag chain then moves the feed into a feed truck bin over the loading drive.

The molasses pipes run parallel to the steam line which supplies all the heat the molasses needs to make it fluid.

Both hay and grain pellets are made in the 60-h.p. California "Roughager" pellet mill.

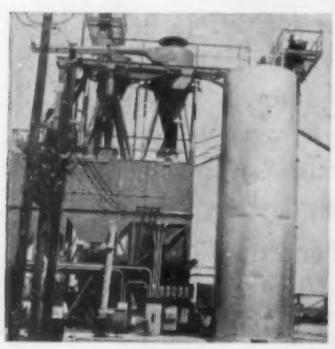
Alfalfa hay, stacked in bales beside the Miller conveyor, are placed on the conveyor and carried into the 100-h.p. Miller hay grinder, which has a grinding capacity of 3-5 bales of hay per minute.

The ground hay is blown into a steel bin big enough to hold the hay from 70 bales. From the bin the hay is conveyed into the scale hopper where it is weighed with other ingredients.

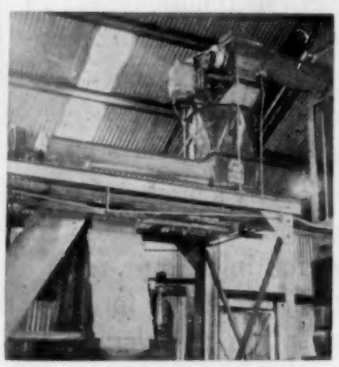
A complete batch of ingredients is dumped into the Williamson batch mixer and run through the molasses blender, if molasses is being used. Then the mixture is augered by a variable speed unit to the pellet mill, which can produce 2-6 tons of straight pellets an hour. Other kinds of pellets are turned out at slower speeds.

Steam for the pellet mill is made by a 40-h.p. Nebraska boiler. The

SIDE VIEW—This is a side view of the Surratt Feed Mill at Clint, Texas. The Surratts produce mash and pelleted feeds in the mill which has a capacity of 15 tons an hour.

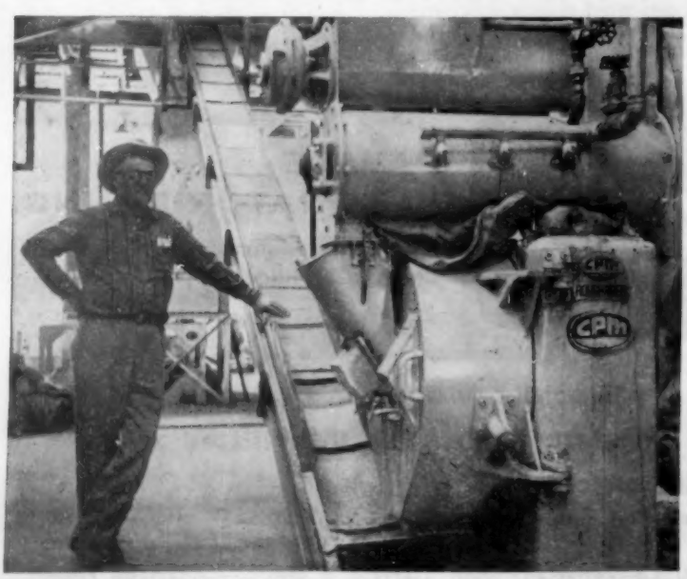


MILL BUILT FIRST — This photo, taken while the Surratt feed plant at Clint, Texas, was being built, shows silo storage bin, other bins, cyclone, elevator, machinery and various controls. In center foreground is mineral and antibiotic mixer. The plant building was erected after the milling equipment was installed.

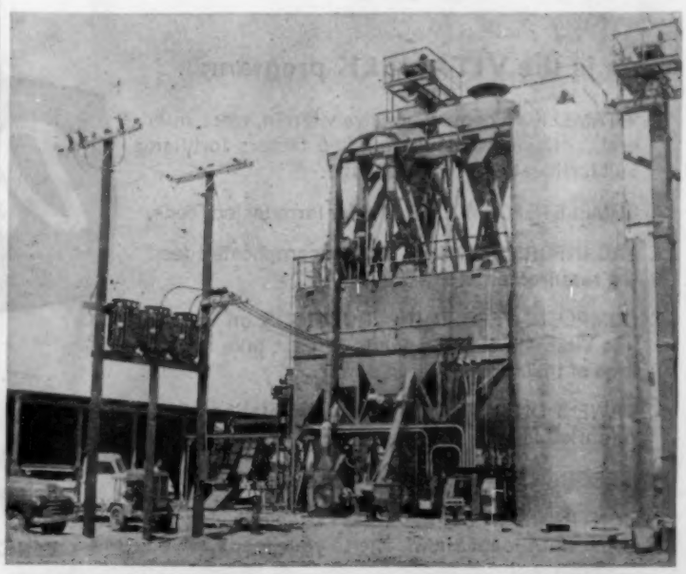


MOLASSES MIXER — Molasses can be blended into any feed produced in the Surratt plant with this Williamson mixer, which is mounted above and to the side of the scale hopper.

CONTROL BOARD—Interior wiring of push button control board which operates Surratt mill is shown here.



OWNER AND PELLET MILL — Howard Surratt stands beside California "Roughager" pellet mill in his new feed mill at Clint, Texas. The 60-h.p. machine is used to make both hay and grain pellets.



DURING CONSTRUCTION—This is how things looked around the Surratt feed mill while it was under construction. Note open grinder (center).

PELLET COOLER — This is California cooler which is fed hot pellets by an inclined drag. Two Binatrols are used to operate the cooler.

STORAGE TANKS—Each of the two steel storage tanks shown in the foreground holds up to 6 tons of bulk poultry feed.

dies in the pelleting machine can be used to make one fourth, three fourths or one half-inch pellets.

The hot pellets fall onto an inclined drag and travel about 40 ft. to the California pellet cooler. The cooler is automatic and is operated by two Binatrols. Cooled pellets fall onto a California pellet shaker where the fines are removed and returned by forced air to be repelleted.

Sacking

Finished pellets are carried by bucket elevator with a two-way valve, which either drops them into the sackoff bin or into a 21-ton storage bin.

The sacking unit turns out 6 tons of pellets an hour. An employee stands by the sackoff machine, and as fast as a sack is filled, he sews it with a hand-held Fischbein sewing machine. Most sacks are made of burlap but some are of paper, the size varying. The bags are moved by hand truck and stacked.

The procedure used for hay pellets is used also for grain pellets, the grain being used from a working bin. The Surratts have facilities to store 21 tons of bulk pellets and several hundred sacks of pellets.

Feeding trucks drive under a bulk storage bin to be filled.

Surratts Are Cattle Feeders

Mr. Surratt and his sons own and operate a cattle company, a cattle ranch in central New Mexico and two adjoining farms. The feed mill is built on one of the farms.

Adjacent to their office and across the road from the feed mill are corrals where the cattle are fed to a high choice finish. These corrals have a capacity of 2,000 head. Canopies are provided for shade. The Surratts have found that cattle in shaded feed lots gain faster than those without shade.

The Surratts feed cattle for other ranchers and farmers as well as for themselves.

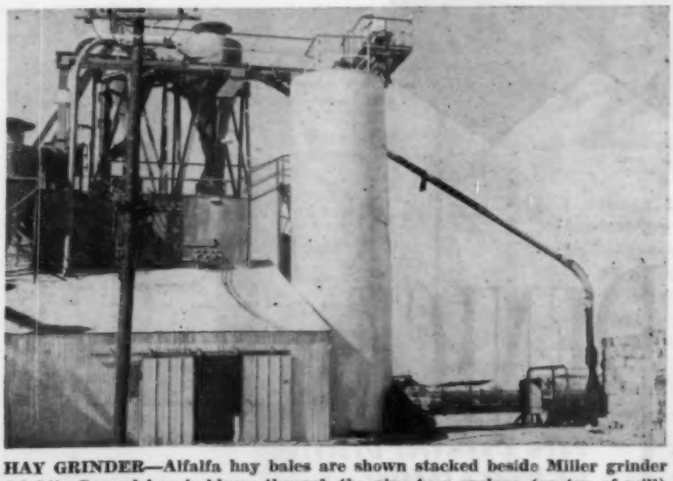
To determine the best feed formulas for their cattle, the Surratts are running tests on their light cattle, using pellets of chopped alfalfa, molasses and some salt. To these pellets they plan to add grain and other concentrates. They also make their own feed in pellet form for their breeding herd on the ranch.

Cattle are brought in from the range, started on a low concentrate feed and taken on up to 75% concentrate grains and other feeds.

To fill the feed troughs, feed is discharged from the side of a bulk truck driven alongside the troughs,

(Turn to TEXAS MILL, page 56)

SACKING UNIT — Finished pellets are moved by a bucket elevator into a sackoff bin and dropped into this sacking unit.



HAY GRINDER—Alfalfa hay bales are shown stacked beside Miller grinder (right). Ground hay is blown through the pipe to a cyclone (on top of mill) and into a steel bin.

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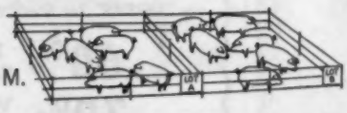
Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.



Interrelationships Among Dietary Energy, Protein and Amino Acids for Chickens

● K. C. Leong, M. L. Sunde, H. R. Bird and C. A. Elvehjem, University of Wisconsin; Poultry Science, Vol. 38, No. 6, November, 1959, pp. 1267-1285.

ABSTRACT

A series of experiments using a partial purified diet technique was conducted to explore the energy-to-protein ratios in diets supplemented and unsupplemented with amino acids to improve quality; to determine the effect of varying energy and protein levels on the requirement of the first limiting amino acid (methionine plus cystine), and to determine the effect of these various dietary variables on the body composition.

A protein mixture of one part fish meal, one part gelatin and three parts casein was used as part of the diet. Varying levels of a stablilized inedible choice white grease from pork (with possibly some beef tallow) were used in different diets in varying combinations with ground yellow corn, and/or cerelose, and/or alphacel, to give the desired protein levels and calorie to protein ratios. All diets also contained certain constant levels of ingredients such as vitamins, salts, antibiotics, etc. In most cases, Productive Energy levels were 950, 1210 or 1450 Calories, with protein levels, depending upon the trial, from 17 to 42%. In certain phases of the investigation, energy levels varying from 700 to 1450 Calories Productive Energy were used at various protein levels to determine the optimum levels of the essential amino acids required using the particular diet for maximum growth.

Review of Outstanding Facts

Space does not permit a complete review of all the differing results of the many experiments in this investigation, but certain facts stand out from perusing the work:

1. Regardless of whether or not diets were supplemented with amino acids, the percentage of protein required for best growth increased with the energy level of the diet.

2. Supplementing these types of diets with DL-methionine and creatine hydrate decreased the optimum protein level required at the various energy levels drastically.

It was shown, for example, that, on the average, unsupplemented diets required the following protein levels for maximum growth at the various energy contents:

Productive energy level of diet-calories	% Protein required for maximum growth	C/P ratio
950	27	35.2
1210	29	41.7
1450	32	45.3

On the other hand, with amino acid supplemented diets the corresponding figures were:

950	17	55.9
1210	22	55.0
1450	27	53.7

3. Interestingly, the most efficient gain at each energy level in supplemented diets was not the optimum C/P ratio for chick growth. Optimum use of feed was with the highest energy level in all cases, but the 37% protein level gave the best feed efficiency for both the 1450 and 1210 Calorie diets, while the 32% protein level gave the most efficient results in the case of the 950 Calorie energy rations. This difference was explained as possibly being due to the fact that the birds at the optimum C/P ratio for growth consumed enough extra feed to make up for a slight protein deficiency, resulting in optimum growth. The birds on the 17% protein level diets developed severe protein deficiency at the highest energy level, and consequently, this influenced the feed conversion figures greatly for this ration.

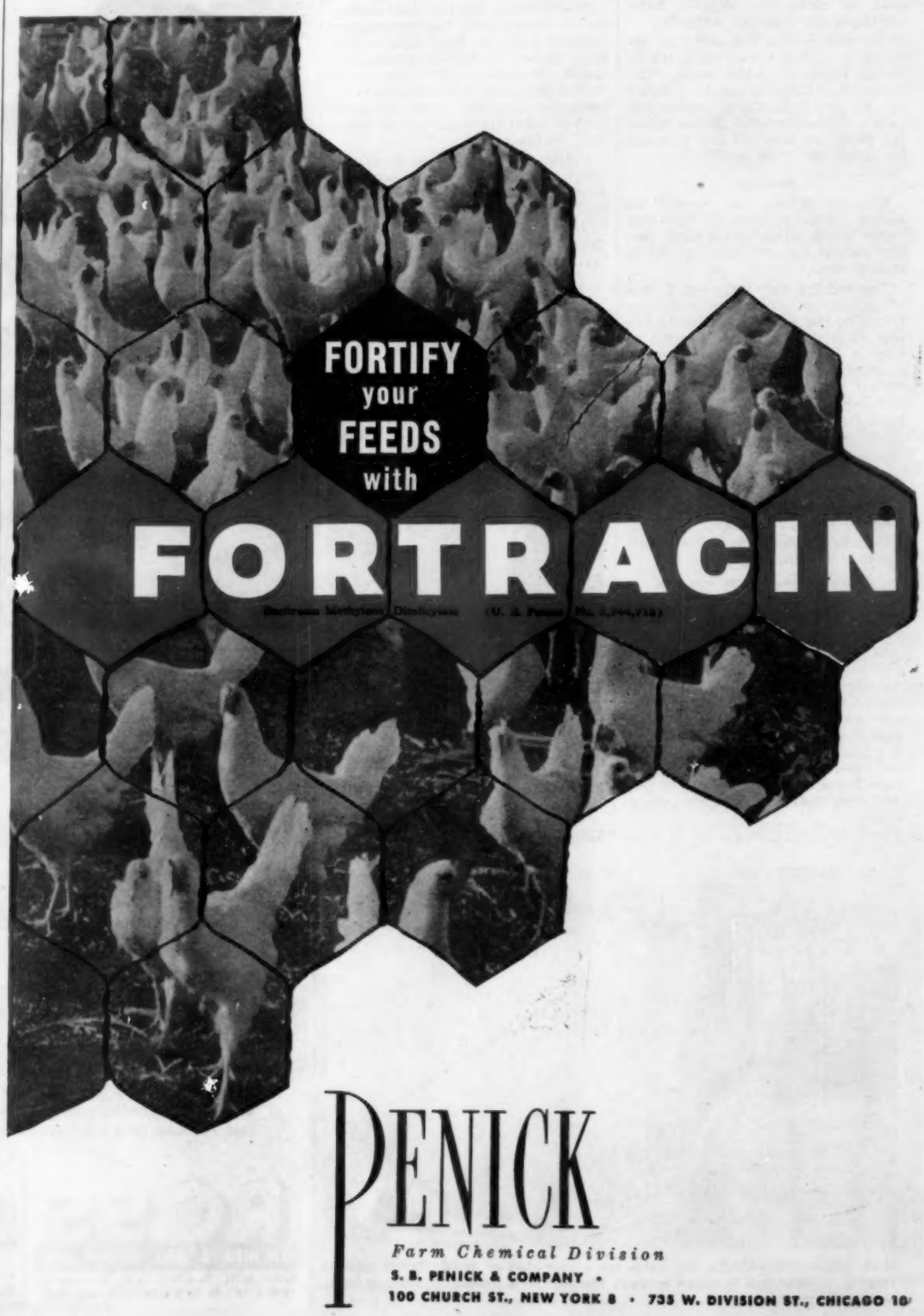
4. The requirement for methionine plus cystine increased as the protein level increased. It also increased as the dietary level of energy increased, if the protein level was adequate.

5. Creatine hydrate was effective in replacing all of L-arginine HCl.

6. At each protein level, the protein was utilized better at the higher energy level. This was particularly true of the "balanced protein" diets. Apparently adequate energy was required for the protein to exert a greater influence on growth. Regardless of energy levels, increased protein levels decreased the grams of live weight obtained per gram of feed protein, at approximately a 45° slope downward from 17% protein to 42% protein levels.

7. Until the optimum feed efficiency C/P ratios were fed, the birds over-consumed feed to compensate for sub-optimal protein with a resulting increase in body fat content.

8. Both visceral fat deposition and the ether extract of the carcasses were influenced more by the source and amount of energy than by the C/P ratio. The 1450 Calorie diets showed high visceral fat deposition at all protein levels. The 1210 Calorie diets had high deposition of visceral fat at the 17% protein level, with lowered fat deposition at levels



Data for Estimating the Methionine Plus Cystine Requirement at Various Energy and Protein Levels

Protein, %	Requirement by calculation from protein level, %	Methionine plus cystine requirement by chick test at productive energy levels of: 950 Cal./lb.	1210 Cal./lb.	1450 Cal./lb.
17	.60	.83	.83	.83
22	.88	.93	.93	.93
27	1.08	1.05	1.05	1.19
32	1.28	1.13	1.23	1.23
37	1.48	1.23	1.30	1.40
42	1.68	1.33	1.40	1.46

of 22% protein or more. All birds on the lowest energy level had low fat deposition at all protein levels.

9. Dietary fat was stored as fat much more readily than were other sources of energy.

COMMENT

There is a tremendous amount of information contained in this report of the experiments conducted by the Wisconsin group of great value to commercial feed formulators, and it is well worth taking sufficient time to read it fully and carefully, even though a semi-purified diet technique was used in the trials.

Although a certain "school" of nutritionists may not agree with all of the various points made by the authors with regard to the influence of C/P ratio and protein levels, the requirements for amino acids and the consequent effect on fat deposition, etc., the workers have documented their case well and based their conclusions upon reasonable experimental evidence.

The accompanying table calculated from the experimental results may be of practical aid in estimating the methionine plus cystine requirement at various energy and protein levels.

●

Calculation of the Nutrient Requirement for Broilers

● H. M. Edwards, Jr., and R. J. Young, University of Georgia, and Procter & Gamble Co., Cincinnati, Ohio; Poultry Science, Vol. 38, No. 6, November, 1959, pp. 1430-1432.

ABSTRACT AND COMMENT

One of the most frustrating experiences for most nutritionists is the development of adequate rations which meet all nutrient requirements when he well knows that many of the standards used for evaluation of such rations are either out of date or unrealistic. Although the 1954 NRC standards for poultry were developed by a committee of well-informed authorities and represented a consensus of opinion existing at the time, modern day formulas are vastly different than those in vogue at that time.

This has meant that many nutritionists have increased certain requirements in the 1954 standards to compensate for higher energy levels, higher protein levels and faster growing birds, especially when formulating broiler rations. They well realize that in many instances their figures may be merely "guesstimates" with little real basis other than personal field observation.

One of the best methods of predicting such requirements is to base the requirement for a particular nutrient on the amount of such nutrient required per gram of gain rather than percentage of daily intake or daily diet offered. This has the great obvious advantage that the requirements may be then tailored to varying protein and energy levels. Although such calculations may not accurately consider varying nutritional relationships, such as sparing action of one nutrient by another, they are very much more accurate than most estimates. Practical experience in the field certainly seems to indicate that they are not only adapted to purified diets, but to direct practical application as well.

The current article in Poultry Science is only one of a series by these authors demonstrating their method of calculating such requirements for varying protein and energy diets. Others worthy of note are: J. Nutrition, 64: 271-280; and Feedstuffs, Sept. 28, 1957, pp. 100-101. The method is not only one of immediate practical value to feedmen, but also lends itself to machine calculation readily.

No Change Expected in Molasses Feeding Rate

WASHINGTON — The volume of molasses fed to livestock in the 1959-60 feeding year should be about the same as the 407 million gallons fed in 1958-59, according to the U.S. Department of Agriculture.

The quantity available for feeding is expected to remain steady because amounts used for alcohol and other products and exports are holding at last year's level, domestic production continues at last year's high level and imports and inshipments more than likely will remain near their 1958-59 levels.

USDA said molasses prices were stable during most of 1958-59, averaging 11% below the 1957-58 level. The New York price remained at about 16¢ gal. throughout last year, then declined to 15.4¢ in January of this year.

The price of No. 3 yellow corn at Chicago in January was equivalent to the price of about 7.5 gal. molasses at New York, compared with 7.3 gal. a year earlier. A bushel of corn is generally considered equivalent in feeding value to about 6.5 gal. molasses.

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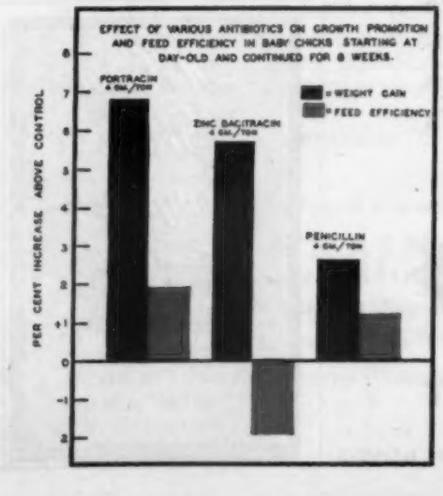
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Minnesotans Say High Grain Storage Profits Not Normal

MINNEAPOLIS — The Farmers Elevator Assn. of Minnesota went on record recently as saying that high profit situation stories as told in congressional committee hearings on government grain storage are entirely "out of line" with normal elevator operation in Minnesota.

The statement was made in a resolution adopted during the group's 53rd annual convention in the Pick-Nicollet Hotel.

Last year, the country elevators built much storage at the request of the Commodity Credit Corp. and an agricultural stabilization committee which was never used, the resolution notes, because the grain was moved by CCC or resealed on farms.

It also was pointed out that the storage cost study mentioned at subcommittee hearings was made in a year in which occupancy was greater than normal. The group urged the Commodity Stabilization Service to give proper consideration to normal deterioration and return on capital in arriving at a schedule of rates on any new Uniform Grain Storage Agreement.

Pete Stallcop, secretary of the Northwest Country Elevator Assn., said that the pressure of recent headlines has set the stage for tough bargaining on the part of the government in negotiating new grain storage contracts.

He charged that the recent investigations have been largely "politically inspired," adding, "Sure, we admit that unusual cases exist, but it does not apply to the entire industry. A lot of you are sitting with empty bins built with borrowed money upon urging of the government."

Seaway Grain Exports

Ron Kennedy, vice president of F. H. Peavey & Co., estimated that direct export of grain from the port of Duluth-Superior may run as high as 130-150 million bu. in 1960. This compares with 86.4 million bu. in 1959, the first year of the St. Lawrence Seaway operation.

He pointed out that the seaway introduces a new competitive factor in the transportation situation, and said the consumers will be the principal beneficiaries because of lower prices. Sellers, he added, will benefit, too, because of increased market.

The entire slate of officers of the Farmers Elevator Assn. of Minnesota was reelected.

Oscar A. Olson, Truman, again was chosen to head up the group. Others reelected were: H. A. Frederickson, Windom, vice president; Lloyd A. Nelson, Minneapolis, secretary, and J. E. Brin, Stewartville, treasurer.

Farm Journal Carries 16-Page Aureo Report

PHILADELPHIA — The story of Aureomycin in formula feeds is being told to farmers in all parts of the country by means of a 16-page detachable report published in the March issue of Farm Journal by American Cyanamid Co., according to a Farm Journal announcement. Farm Journal said it believes this is the first time an advertisement of this magnitude has been published in a major farm magazine.

The four-color report, which accompanies a two-page advertisement by American Cyanamid, is divided into two sections. The first explains what antibiotics actually are, where they come from and how they work. The second part describes the specific benefits of Aureomycin for each species of livestock and poultry.

The report urges farmers to discuss their antibiotic feeding needs with their feed manufacturers or feed dealers.

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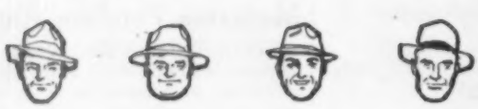

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Egg Problems, Probabilities Examined by Midwest Panel

KANSAS CITY—The Midwest will have to develop production and marketing efficiencies equivalent to that in areas with which it is competing for egg business if it is to halt its decline in egg production.

This was one more-or-less general conclusion of a panel discussion on "How Can the Midwest Stay in the Poultry Business" held during the Midwest Feed Manufacturers Assn. meeting here Feb. 8.

The discussion brought out some divergent predictions.

For example: In 10 years, 80% of all eggs will be produced by people who have 50,000 layers or more. This was forecast by John Randolph, Corn Belt Hatcheries, Hope, Ark. Mr. Randolph operates egg production programs in addition to hatchery operations.

For example: In the Midwest, 1,500 to 3,000-bird units on family farms will be able to compete for markets if they are operated efficiently. Flocks of this size can be handled with leftover labor. The Midwest has advantages in egg operations because other farm enterprises help support them. This prediction was made by Bill Parmalee of Mel Miller & Co., Kansas City, feed industry consulting firm.

Plight Described

The plight of the midwestern producer was described by Don Turnbull, executive secretary of the American Poultry & Hatchery Federation, Kansas City.

"The Midwest has lost its West Coast markets," he said. "Now it has largely lost its southern market and is competing with the Southeast for New England markets. From 60 to 80% of midwestern egg production must be exported."

Mr. Turnbull expressed the opinion that "the farm flock is done" except for very nearby markets. He said he felt flocks of 1,500 birds could be retained if marketing arrangements can be worked out locally.

Dr. E. M. Funk, University of Missouri, commented that producers in the Midwest are not in a position to take large market risks and therefore someone else will have to. He predicted more integration in the area if egg production is to be maintained.

The panel, moderated by Phil Evans, Kansas City broadcaster (KMBC) who operates the station's demonstration farm, made these additional comments on production and marketing situations:

Randolph: When the egg industry gets streamlined, baby chick prices will drop 40%.

Turnbull: Breeders will continue to have heavy costs, so any reductions in price will have to come from reduced sales costs.

Randolph: Costs can be reduced when production plans are set, as in broiler production. Sales costs are eliminated.

Evans: What about feed costs?

Parmalee: Feed costs per dozen eggs are about 12 to 16¢. This cost should not be more than 14¢.

Randolph: If 75% of the cost of producing eggs goes for feed, we can save mainly in distribution costs. However, it is possible that eggs can be produced for a feed cost of 10¢ doz. somewhere in the Midwest.

Parmalee: Labor costs average 3¢ doz. in my operations. I want to cut this to 1½ to 2¢ doz. Family-sized flocks of 3,000 to 5,000 layers are producing eggs for a total cost of 28¢ doz., and they should shoot for 24 to 26¢ doz. However, this should not be considered the "bottom." Ways to reduce costs that we don't know about now are bound to develop.

Dr. Funk: The lowest costs I know about in our area now are 24¢ doz.

Evans: How can we get more for our eggs? Let's examine the marketing side of the picture.

Parmalee: When country run prices dropped to 20¢ recently, program eggs were bringing 28¢. We need to produce for a market, in uniform quality and volume. Someone must represent the producer.

Evans: I can't understand why El Paso prices should be based on prices in New York, Dodge City or Chicago.

Turnbull: There is definitely a need for someone to represent the producer in the market.

Randolph: Someday we will have national egg concerns—perhaps they will be General Mills, Purina or someone else.

Evans: The supermarket boys tell me they don't sell any more eggs at 35¢ doz. than they do at 45¢ d Eggs are used as loss leaders. May the farmers should ask them to stop doing it.

Discussion from the floor brought out suggestions that consumer education on quality is needed, as well as some new products and better shelf-life for eggs.

One member of the audience singled out two enemies of egg consumption. Said he: "People don't eat eggs for breakfast like they used to. Now they snack until late at night while watching television, and in the morning they skip breakfast and wait for the coffee break."

Philip R. Park, Inc., Appointments Made

SAN PEDRO, CAL. — Appointments of an assistant eastern sales manager and three territory managers have been announced by Philip R. Park, Inc.

Russ Matthiesen, Curlew, Iowa, was promoted from territory manager to assistant eastern sales manager, according to Mrs. Gertrude Beckwith, president.

Territory managers appointed are: Virgil Pearson, Gonzales, Texas, who will serve southeast Texas; Warren Brown, Albert Lea, Minn., who will serve Minnesota, North Dakota and portions of Wisconsin, and Lee Pratt, Minneapolis, who will serve states from Ohio east.

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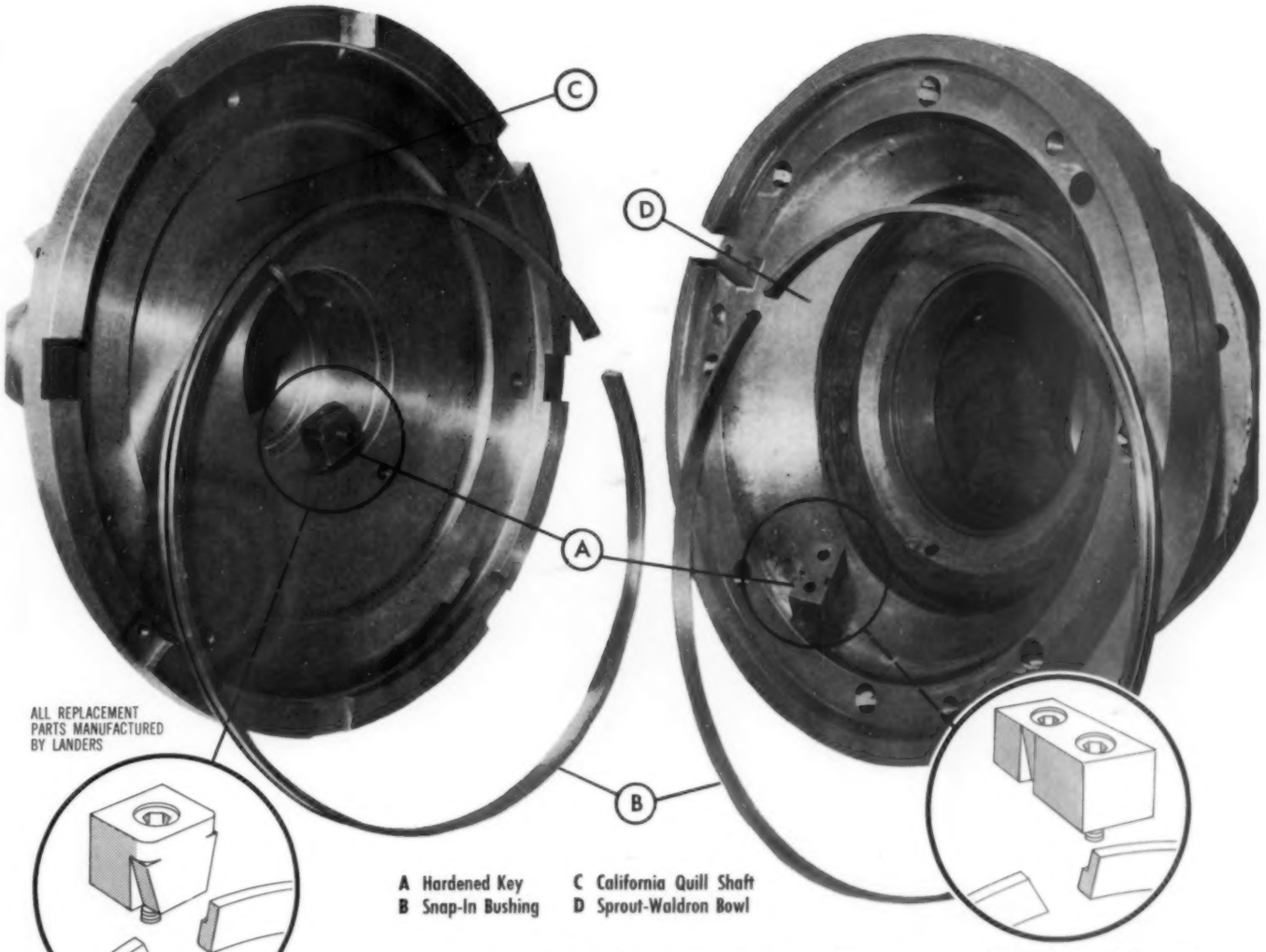

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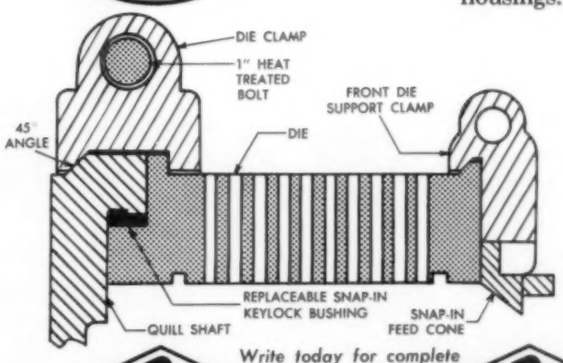

The cross-section view shows the Landers Snap-In Bushing in a California Quill Shaft assembly. Note the new Landers heavy clamps for quicker take-down, longer life for mills up to 125 HP. Snap-In Bushing eliminates studs and driving rim as well as lost down time. 45° angle on die clamp prevents excessive spread.

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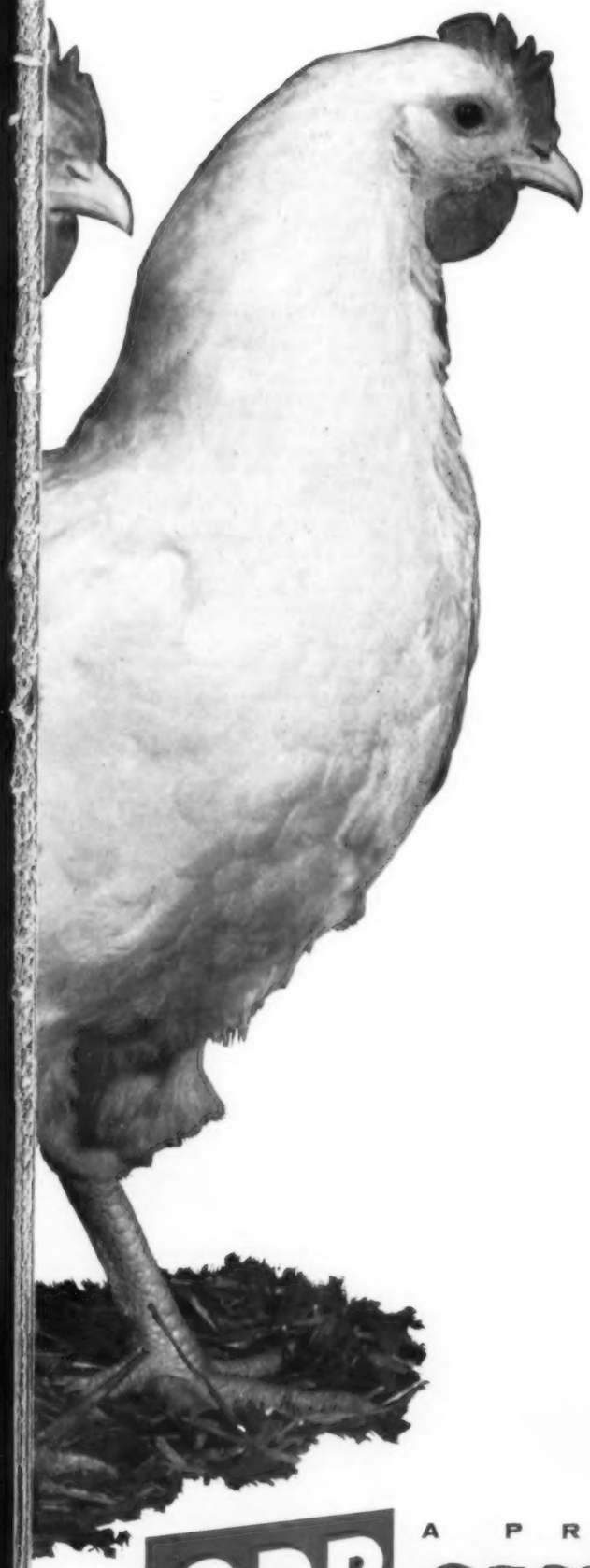

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1. "The Availability of Phosphorus from Different Sources of Poults Fed Purified Diets." Poultry Science, Volume XXXIII, Number 5, September, 1954.
2. "A Comparison of the Availability, to the Young Growing Chicken, of the Phosphorus in Defluorinated Phosphate and Analytical Reagent Grade Dicalcium Phosphate," by Lime Crest Research Laboratory, October, 1954.
3. "The Availability of Phosphorus from Different Sources for Poults Fed Practical-Type Diets." Poultry Science, Volume XXXIV, Number 5, September, 1955.
4. "Phosphorus Availabilities as Determined by New Feeding Experiment," by Lime Crest Research Laboratory, November, 1955.
5. "Phosphorus Availability Assays by the University of Illinois Method," (as presented by Dr. H. M. Scott) conducted by the Laboratory of Vitamin Technology, Inc., September, 1956.

Coronet Defluorinated Phosphate is a result of creative development, quality production and continuing research. No phosphorus feed products are subjected to more meticulous quality control than those produced by SMITH-DOUGLASS.

Guaranteed Uniform Analysis

Phosphorus	Calcium	Fluorine
18.0% min.	31.0% min. 34.0% max.	0.18% max.

Screen Analysis: All through 14 mesh; 80% on 200 mesh, plus or minus 5%.

Solubility Comparison of CDP With Other Defluorinated Phosphates

PRODUCT	Solubility in 0.4% HCl	Solubility in 2% citric acid	Solubility in neutral ammonium citrate	Average total solubility
CDP	100.00%	87.14%	86.16%	91.10%
Product A	96.48%	51.19%	19.41%	55.69%
Product B	82.79%	38.61%	9.08%	43.49%

Chemical solubilities determined by TERMINAL TESTING LABORATORIES, INC., Los Angeles 33, Cal.

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Quaker Oats Reports Rise in Net Income

CHICAGO—The Quaker Oats Co. reported a rise in net income of $218,456 for the six months ended Dec. 31, 1959, over the same period in 1958, despite a drop in net sales of $2,140,148 for the 1959 period.

In an interim report to Quaker Oats Co. stockholders, Donold B. Lourie, president, reported a net income of $1.93 per share of common stock as compared with $1.86 per share for the same period the year before.

The report noted net income for the 1959 period at $7,606,554, comparing with $7,388,098 in 1958. Net sales were listed as $163,170,191 in 1959 and $165,310,339 in 1958.

Cost of goods sold was considerably less than in 1958 and income from other operations rose. Selling, general and administrative expenses were up as were federal and foreign income taxes.

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Program Plans Noted For Oregon Feed, Seed Dealers Convention

PORTLAND, OREGON—Speakers for the 29th annual convention of the Oregon Feed & Seed Dealers Assn. —to be held March 17-18 in the Sheraton Hotel, Portland, have been announced by Hal Hardin, program committee chairman.

Speakers will include John K. Westberg, sales manager, feed ingredient department, International Minerals & Chemical Corp., Chicago; Dan P. Allen, committee of natural resources, Salem, Oregon; J. Roger Deas, American Can Co., New York; Dr. A. Conrad Posz, director, Northwest Schools, Portland, and Howell Appeling, Oregon secretary of state. These speakers will all appear on the March 18 portion of the program.

The program Thursday, March 17, will be devoted to a half day session featuring the fertilizer and insecticide industry in the morning, while the afternoon will deal with the problems of the seed industry. Cliff Cully, Wilson & Geo. Meyer & Co., Portland, is chairman of the fertilizer section and Stan Fagg, Northrup King & Co., Albany, is seed program chairman.

Dick Cook, general convention chairman, announced that social functions will include a no-host luncheon March 17, the annual social hour honoring the association officers and board of governors and a men's social gathering in the evening.

The annual association sports luncheon Friday, March 18, features Hollis Goodrich as speaker. Mr. Goodrich, a public relations consultant in the Pacific Northwest, is well acquainted with many of the area's sports figures.

The annual men's social hour will be held in the afternoon, and will be followed by the annual men's banquet and floor show. At the same time, ladies will be entertained with a social hour, fashion show and banquet. Following these two events the two groups will join in a social hour and dance in the grand ballroom of the hotel.

Feed Products Sales Head Named by Dow

MIDLAND, MICH.—Hollis H. Brower has been named marketing manager for feed industry products of Dow Chemical Co., according to W. W. Allen, manager of the agricultural chemicals sales department. Mr. Brower will head the animal health products section of the department.

H. H. Brower

"The new section has been established to move closer to the interests of the livestock and poultry fields," Mr. Allen said. "Forming of the specialized marketing group follows greater concentration of Dow research efforts on solving problems of the poultry and livestock fields."

Mr. Brower has been with the firm since 1954, when he joined the agricultural chemicals development section. Since 1955, he has been in sales work for Dow. Prior to that time he spent some 14 years in the feed and hatchery businesses.

NEW PART OWNER

SAN FRANCISCO—A second western meat packing firm has acquired interest in Union Feed Yards, Blythe, Cal., a cattle feeding enterprise which will soon have facilities to feed about 40,000 head at one time. Other part owners are Survall Packing Co., Los Angeles, and Union Packing Co., Los Angeles.

March Proclaimed National Egg Month

CHICAGO — March has been designated as National Egg Month in order to help take an abundance of eggs off the market and help stabilize the egg business and firm-up egg markets for producers and handlers.

This nationwide campaign—under the general direction of the National Egg Month chairman, Carroll Eiler, Poultry & Egg National Board director, and his state chairmen—is already in full swing in many states.

Inaugurating this promotion is an endorsement of National Egg Month by Ezra Taft Benson, secretary of agriculture. "I fully share the enthusiasm behind the 'March Is National Egg Month' campaign and view it as a marketing event which clearly serves the public interest," stated Sec. Benson in a letter to Lloyd H. Geil, PENB general manager.

National Egg Month, sponsored by PENB, coincides with Lent, a period when egg dishes are most popular. Egg recipes from the test kitchens of PENB, during National Egg Month, will introduce new ways of serving eggs for Lenten meals.

Point-of-sale material for food marts and restaurants is being distributed through the PENB state egg month committees. Full-color posters and counter strips will proclaim the "golden goodness of eggs" in food stores while three-sided table tents and place mats will suggest egg dishes to the nation's hotel and restaurant customers.

Official proclamations are being prepared and signed by governors and mayors throughout the country to proclaim National Egg Month observances in their areas.

The U.S. Department of Agriculture and the nation's farm, poultry and food associations are cooperating with the $2 billion egg industry in this nationwide promotion to help consumers utilize more eggs.

Feed Mill President Believes Contract Farming Is 'Doomed'

OKLAHOMA CITY—The president of Superior Feed Mills here believes contract farming is "doomed to failure because it takes away the initiative from the feeder or farmer and makes him a 'robot'."

B. D. Eddie, in an article in the Daily Oklahoman recently, said contract farming "is in direct conflict with the free enterprise system which has made our nation great."

Mr. Eddie described the type of farm operation he believes is on the way out this way: ". . . One party, oftentimes the feed mill, will furnish the poultry or turkeys, whatever the case may be, plus all the feed to a farmer and pay the farmer a given set amount for raising on the basis of so much per head at the time of marketing."

He commented further, "Only the weak farmers and growers would be interested in the contract farming type of operation because it removes any responsibility from them and the ultimate outcome is for the account of the contractor.

"We believe we will see a return to diversification where the farmer or grower will raise chickens, milk cows, hogs and beef cattle and keep the operation within the scope of the ability of the farmer and his family to handle."

Mr. Eddie believes horizontal integration in meat animal production—"financial aid together with management service provided by the feed mill"—is "here to stay." But, in his opinion, vertical integration — "complete integration of the feed manufacturer, grower and marketer" — will have to undergo "much renovation if it is to remain permanent."

PANEL MEMBERS—Members of the panel on "Influence of Environment Upon Disease Control" are shown (left to right): Dr. C. A. Bottorff, American Cyanamid Co., Princeton, N.J.; Dr. Thomas Coulton, Cooperative Mills, Inc., Bridgeville, Del.; Ralph Culton, Wallace Hy-Cross Hatcheries, Inc., Doylestown, Pa.; Harold Gulvin, Eastern States Farmers Exchange, West Springfield, Mass., and Dr. William Mellen, department of poultry husbandry, University of Massachusetts.

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Ingredients for Better Rations Discussed at Oregon Meeting

By BURTON E. BERGER
Oregon State College

CORVALLIS, ORE. — Ingredients needed to make better rations for today's high-producing animals took the spotlight at the 18th annual Animal Industry Conference held recently on the Oregon State College campus.

More than 150 Oregon feed men and industry leaders attended the two-day conference, sponsored by the Oregon Feed & Seed Dealers Assn. and by OSC. They looked over latest research findings that could help dairy, poultry and livestock owners meet the demands of today's competitive markets.

"Dairymen spend a lot of time worrying about vitamins, minerals and protein levels in their feeds," said Dr. N. L. Jacobson, dairy scientist at Iowa State University, Ames, Iowa. "But dairymen should also make sure that each ration contains enough energy. Energy is most often the limiting factor in dairy rations," he stated.

Each year there are fewer cows in the nation, yet total milk production continues to climb as dairymen do a better job of management, Dr. Jacobson added. This trend should continue, he said, since, with proper feeding and management, almost any dairy herd in the nation could increase its production 15% overnight.

Antibiotics, tranquilizers and other feed additives can sometimes be useful in dairy rations, but only when used in addition to a good ration and not in place of one, Dr. Jacobson said. Reporting research over the nation, he said that, in general, "additives have tended to add little to milk production. More needs to be known about them before they can be used to best advantage."

Poultry Flavor

Another speaker, Dr. Hans Lineweaver of the U.S. Department of Agriculture Western Regional Research Laboratory, Albany, Cal., told the group there is a "surplus of undocumented statements" about the flavor of today's poultry products.

People like to say chicken or eggs don't taste as good as they did in the "good old days," but research has shown this just isn't so, Dr. Lineweaver declared. Chickens are one of the oldest domesticated animals kept by man, he pointed out. "Through many centuries they have been able to adapt to a wide range of conditions and feeds. And today, scientific taste-testing research reports they're as tender and flavorful as ever."

While feed can influence quality of the finished product, there is no reason to discriminate between grains as far as poultry flavor is concerned, Dr. Lineweaver stated. There is also no reason to worry about what protein supplement to use, except that fish meal can be troublesome occasionally, he added.

Minerals

A revived interest in mineral metabolism and mineral requirements for optimum performance of animals was reported in a paper presented by Dr. Gillis, International Minerals & Chemical Corp., Skokie, Ill. One of the big problems has been to find ways to efficiently measure the amount of available minerals in feeds.

Biological values for phosphates, obtained in laboratory assays, can now help mix feeds that will supply enough of this essential element in a form available to animals, Dr. Gillis said. He added that levels of calcium must also be watched, since too high a level of calcium can affect an animal's assimilation of trace as well as other mineral elements.

Reporting current research at Oregon State College, Dr. David C. England, Oregan State College animal husbandman, said that experiments on feeding pelleted feeds to swine failed to show any clear-cut increase in feed efficiency, although there was a slight increase in rate of gain. The increase in market weight of weaner pigs fed pellets didn't seem enough to pay cost of pelleting, he added.

Dr. P. H. Weswig, Oregon State College agricultural chemist, reported research findings that a considerable amount of carotene, which animals convert into vitamin A, is destroyed when alfalfa hay is processed into wafers or pellets. However, alfalfa has such a good supply of carotene to start with that there's still plenty left in the wafers and pellets to supply needs of livestock, he said.

Present recommendations for feeder and waterer space for chicks are quite adequate, the group was told by William H. McCluskey, Oregon State College poultryman. He checked growth rate and feed efficiency of chicks using a variety of feeder and waterer spacings both above and below current recommendations. No significant differences were found, Mr. McCluskey said.

Dr. Paul Bernier, poultry breeder at Oregon State College, reported progress of his research on development of midget laying hens. Oregon State College has a flock of over 100 of the midget hens and has been checking their egg-laying potential.

The midget chickens are almost one third smaller than normal-sized Leghorns, Dr. Bernier said, yet are normal in every other respect. Their small size is due to one sex-linked gene, rather than a complex of genes.

The midgets didn't average out quite as well as normal hens, Dr. Bernier reported. However, some of the midgets did "very well" on an individual basis, indicating a high-laying strain of the midgets might be developed through selection.

A selection program will be started soon, and Dr. Bernier said he was quite optimistic the midgets would be able to produce eggs on less feed, he pointed out, since they would need one third less feed for body maintenance.

Research aimed at finding lower-cost feeds for Pacific Northwest poultrymen was reported by Dr. G. H. Arscott, Oregon State College scientist. In his tests, western corn performed as well as eastern corn, he said, and much interest now exists in building rations using locally-grown corn.

Rates of Feeding Cows Hit High

WASHINGTON — Grain feeding rates for milk cows reached a new high for Feb. 1, a U.S. Department of Agriculture report points out.

Crop reporters fed their milk cows an average of 7.71 lb. of grain. This is an increase of 4% from the previous Feb. 1 record set last year and 19% above the 1949-58 average for the date.

Seasonally, USDA notes, grain feeding rates increased only 10% from Dec. 1-Feb. 1 compared with the usual advance of 13% between these dates.

Crop reporters fed grain and concentrates at record rates in all sections of the country on Feb. 1, the report states. The new highs for the date by regions were 8.4 lb. in the east north central; 8.3 lb. in the north Atlantic; 7.9, west north central; 7.2, south Atlantic, and 6.8 lb. in both the south central and the West.

SELLIN' SAM By Jim Zilverberg

Texas Grain Men Urged to Develop Feeder Accounts and Improve Business

By RON LOGAN
Special Correspondent

COLLEGE STATION, TEXAS — "Develop feeder accounts and improve your business," said Warren LeBourveau, Mathis (Texas) Grain & Elevator Co., to some 250 grain men attending the short course on grain drying and storage held at Texas A&M College recently.

Mr. LeBourveau, whose talk, according to the program, was "Managing Your Elevator in 1960," shifted his emphasis to "After Grain Storage—What?"

Earlier he had discarded the old question, "Will we have enough grain storage space in 1960?" for "Will present storage space in Texas be needed in the future?"

This, in fact, was the underlying theme of this whole meeting, as grain storage men try to adjust to effects of the St. Lawrence Seaway on their future business.

Effects of the seaway taking most of the grain from north of Oklahoma, which used to move to Gulf ports; hard, practical guesswork that government support programs and storage policies are due to change, and the shifting emphasis within agriculture itself—all of these were being talked wherever conference participants turned.

As Mr. LeBourveau described the government's role, "Government support programs, as we know them today, are on the way out of the picture. Voting power is moving to the cities and is making itself felt there." He cited other reasons, and said, "All of this means to me that less grain storage will be needed in future to store government grain.

"After grain storage—what?" he asked.

Will Take Enterprise

"It's going to call for enterprise on your part and mine, if we're going to survive in the grain storage business," he declared. "We're in about the same position as a piano tuner I met in one of the wild and lonely reaches of New Mexico. I asked him if he didn't find piano tuning a little slim there where there were so few pianos. He said, 'Yes—but I make a pretty good living tightening barbed-wire fences.'

"Grain production is like manufacturing in one way—it takes time, and when you get through, you have a valuable product. But it's different, in that it's all completed at once," Mr. LeBourveau said. "You can't stop the production line whenever you want; and you can't slow it down. So you hit the end of the season with your whole year's product at once. That means it has to be stored, somewhere.

"Right now, here in Texas, we have enough storage space to store almost two years of 'normal' production," he said.

It was at this point that Mr. LeBourveau listed several alternative possibilities, including the development of feeder accounts.

This, from the grain storage quarter, is among many deep-seated opinions expressed by various groups that the state inevitably must develop its own feedlot industry.

Mr. LeBourveau quoted an earlier speaker, Walter Blanton, Fort Worth, president of the Texas Grain & Feed Dealers Assn.: "There are a great many people in the grain storage business who are not in the grain business."

Storage Agreement

Ray Bowden, Fort Worth, secretary of the TG&FDA and another featured speaker, said the outlook for Texas grain elevators depends on what the government does on the schedule of rates in the Uniform Grain Storage Agreement. The rates last were changed in 1956 and all costs since then have risen along with inflation.

Mr. Bowden also predicted that warehousemen can look for tightening control by the Food and Drug Administration, with the possibility that tolerance limits may be set on chemical residues from grain fumigation. Quarantine regulations on the corn borer can be expected to continue indefinitely in Texas, he said.

C. H. Moseley, director of the Commodity Stabilization Service in Dallas, also emphasized the big increase in Texas' grain storage space. He said it has jumped nearly 300 million bu. in the last two years.

He said the only grain movements in the near future by the CCC will be normal shifts from country points through terminal elevators.

"We don't contemplate any need to reconcentrate grain into country warehouses as has been the practice during the years of space shortage," he added.

He said reorganization of UGSA storage contracts now is under way and a cost survey has just been completed on grain storage. Negotiations are still going on and the outcome is yet unknown.

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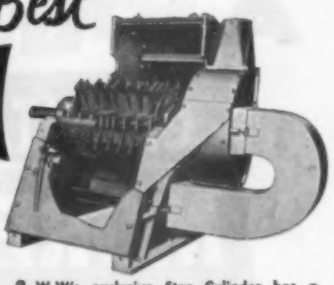

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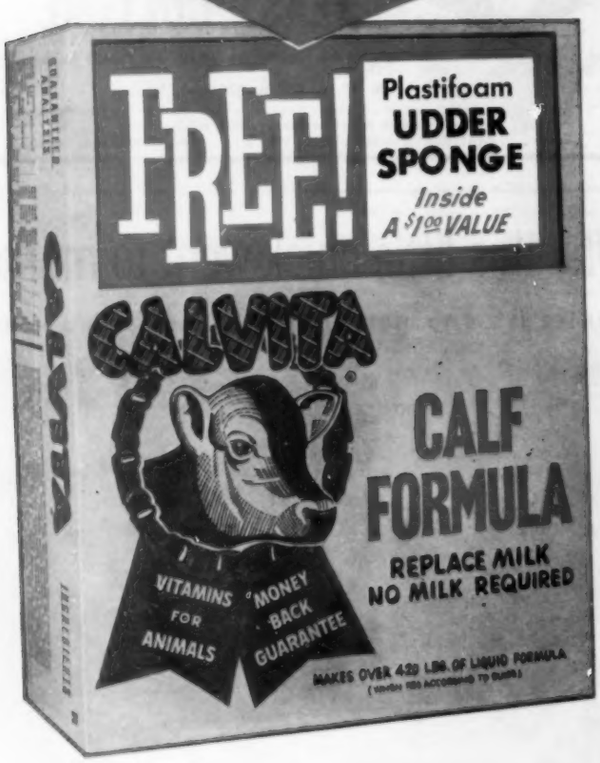

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AFMA Convention Delegates Urged to Make Reservations

CHICAGO — Persons planning to attend the American Feed Manufacturers Assn. convention are being urged to make reservations early. The convention will be held May 9-11 at the Conrad Hilton Hotel. More than 2,000 feed men are expected to attend the event.

There will be no exhibits in conjunction with the 1960 convention. Otherwise, the convention format will follow the customary pattern, association officials said in a recent bulletin. On Sunday, May 8, several executive committees will meet. On Monday, nearly a score of full-scale committee meetings will be held. These will involve such groups as nutritionists, purchasing agents, traffic men, feed control relations men, members of the AFMA board of directors and others.

The convention proper will convene in the Grand Ballroom Tuesday morning. In addition to the forenoon session, there will be an official afternoon session. The "sunshine hour" will be held Tuesday evening, and the convention proper will close with a forenoon program Wednesday.

The AFMA board recently entered into agreement with the manager of the National Feed Show to stage the next Convention-Feed Show in May, 1961. This establishes the combined function on an alternate-year basis.

FDA Appoints Dr. J. E. Guthrie

WASHINGTON — The Bureau of Medicine, Food and Drug Administration announced the appointment of J. E. Guthrie, D.V.M., as a veterinary medical officer in the veterinary medical branch.

Dr. Guthrie was formerly associate director of research for the Hess and Clark division of the Vick Chemical years, he was responsible for Hess and Clark's feed additive research as it pertained to farm animals.

Prior to joining Hess and Clark's research staff, he was associated with the zoological division of the former Bureau of Animal Industry at Beltsville, Md.

Dr. Guthrie graduated from Ohio State University, College of Veterinary Medicine in 1938.

Wyoming Association Elects New Officers

CASPER, WYO. — E. T. Person, Lingle, was elected president to succeed Eddie Willard, Worland, during the two-day 15th annual convention of the Wyoming Grain, Feed & Seed Dealers Assn. here.

Lloyd Sowers, Laramie, is new vice president, and Everett Berry, Sheridan, is secretary-treasurer.

Elected to the seven-man board of directors was Clarence Hersey, Glenrock, replacing his son, Don. Reelected were Charles Allen, University of Wyoming, Laramie, and Adolph Herrman, Sheridan.

Mr. Willard was named ex-officio member of the board. Holdover members include O. F. Jacquot, Casper; Harry McMillan, Riverton, and Howard Toomey, Newcastle.

TEXAS MILL

(Continued from page 43)

which are outside the fence. Pellets and hay are made available to the cattle at all times.

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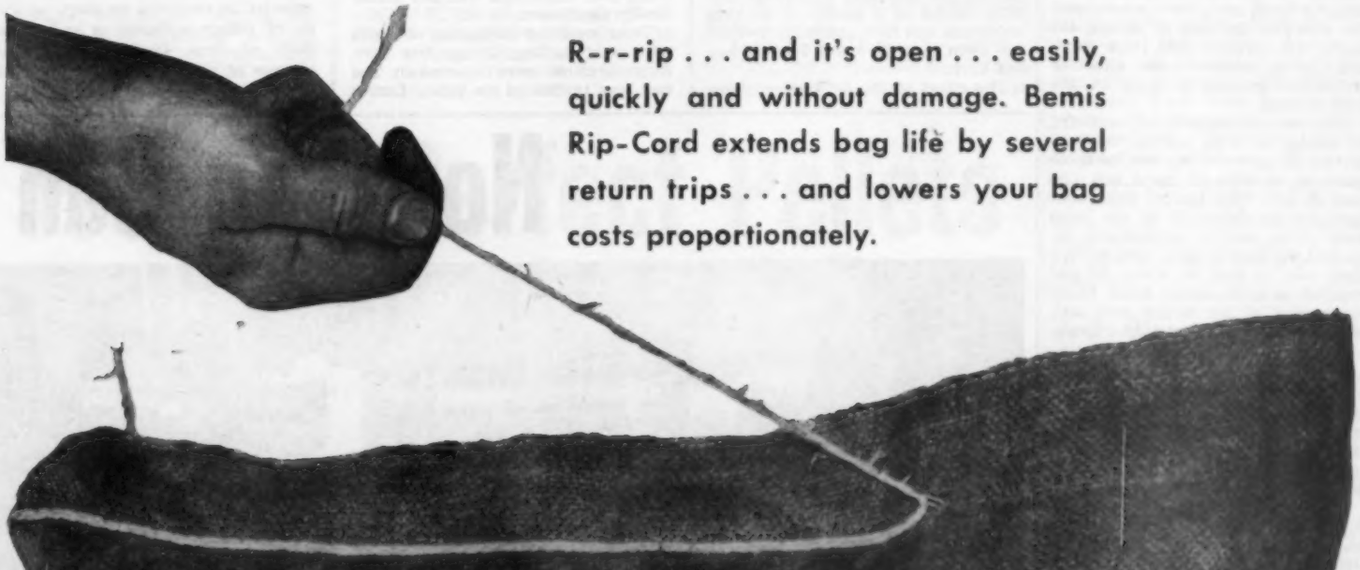

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Research Reports on Feeding Highlight Minnesota Sheep, Lamb Feeders Day

By DR. R. M. JORDAN
University of Minnesota

MORRIS, MINN.—The 33rd annual Minnesota Sheep and Lamb Feeders Day was held Feb. 18 at the University of Minnesota's West Central Experiment Station at Morris. Reports on various feeding experiments were among the highlights of the event.

A report by H. E. Hanke and R. M. Jordan told of research on the practice of gleaning corn fields with growing-fattening lambs.

The objects of this experiment were: (1) to determine the merit of feeding a protein supplement to lambs grazing corn; (2) to determine the effect of the date of turning the lambs into corn on total lamb gains, and (3) to determine the effect of preharvest grazing in corn on the yield of corn.

The protein supplement was fed by mixing it with salt in the proportion of two and one-half to three parts of soybean oil meal and one part of salt. This limited daily consumption to about .10 lb. per lamb daily. The protein supplement increased the gain 25-30%, reduced feed costs cwt. of gain by about $2 and resulted in more lambs being ready for market at an earlier date and, in 1959, at a somewhat higher price.

It took the lambs about two weeks to become adjusted to feeding in the corn fields, and, during this two-week adjustment period, their gains were very slow. The average gains made by the lambs during the pre-harvest period were about .25 lb. per lamb daily.

From the standpoint of lamb gains it was more advantageous to turn in on Aug. 18 than it was on Sept. 3. Date at which the lambs were turned into the standing corn had little effect on the amount of corn they ate or corn yields. However, pre-harvest grazing of feeder lambs reduced corn yields 6-10 bu. per acre. This reduction in yield which was charged against the lambs made their cost of gain higher than comparable lambs that were fed in dry lot. Furthermore, the dry lot fed lambs which gained .51 lb. per lamb daily were ready for market about a month earlier, and therefore sold for about $1.50 cwt. more than the lambs fed in the corn field lots. Under price conditions as of 1959, the most profitable lamb feeding system was dry lot feeding.

Results of a rather extensive trial involving the feeding of complete pelleted lamb rations were reported. Various proportions of concentrate to roughage were used. The roughage was of high quality. The ratios varied from equal parts of concentrate and roughage to pellets containing 100% roughage. As the amount of roughage in the ration increased, the advantage of pelleting increased as measured by lamb gains.

Pelleting equal parts of concentrate and roughage increased lamb gains about 22% over a comparable ration fed in meal form. Pelleting a 100% roughage ration increased the gains 46% over chopped alfalfa. The best combination from the standpoint of rate of gain and carcass finish appeared to be a ration containing 75% roughage and 25% concentrate. In a 70-day period, pelleting the rations resulted in about 6-12 lb. greater gains.

Adding molasses to a pelleted ration consisting of either equal parts of concentrate and roughage or a ration containing 25% concentrate and 75% roughage had little effect on average daily gain, feed consumption or feed efficiency. Lambs fed pelleted rations were superior in carcass finish, but regardless of the concentrate-roughage ratio fed as a pelleted ration, lambs fed pellets shrank 1-4% more than their counterparts fed a meal ration. Due to this greater shrinkage and their higher feed costs, they did not, in all cases, show more margin than lambs fed a meal ration.

With narrow margins existing and high transportation and pelleting costs, it would appear that the feeding of pellets would be most advantageous for the small to average size lamb feeder as a means of starting his lambs and then gradually switching them over to a self feed of hay and corn.

The effect of the antibiotics oleandomycin and kanamycin, the enzyme mixture Agrozyme and lysine, an amino acid, were reported. Native lambs purchased at South St. Paul and fed two antibiotics, oleandomycin and kanamycin, made the most rapid gains of any of the lambs fed.

A corn-alfalfa-soybean oil ration appears to have ample lysine. At least, the lambs fed added lysine in this test did not gain appreciably faster than the control lambs.

The feeding of the enzyme mixture Agrozyme resulted in the slowest rate of gain, and it was apparent during the feeding trial that these lambs were more difficult to keep on feed.

While the trial favored the two antibiotics as feed additives, the difference in the rate of gain between the control lambs and the lambs fed these two antibiotics was not statistically significant.

Tests involving implanting of lambs with long lasting tranquilizer (trifluomeprazine) were reported on. The test was replicated six times. Lambs implanted with 5 mg. of this tranquilizer gained 10-30% slower than the control lambs.

Research at the University of Minnesota indicates that so long as sheepmen feed an adequate amount of feed to their ewes, it matters little whether they are fed once a day or three times a week. Pregnant ewes fed three times a week produced as many pounds of lamb, milked as well, lambed as easily and produced as many pounds of wool as ewes fed daily. The system offers sheepmen another opportunity to reduce labor costs.

The feeding of either soybeans or cull peas to pregnant ewes had no effect on the health and thrift of the ewe, nor did it affect the incidence of muscular dystrophy or stiff lamb disease. No stiff lamb disease was reported in ewes fed as much as 1½ lb. of either soybeans or cull peas. Both of these feeds are excellent sources of protein and can often be bought at economical prices.

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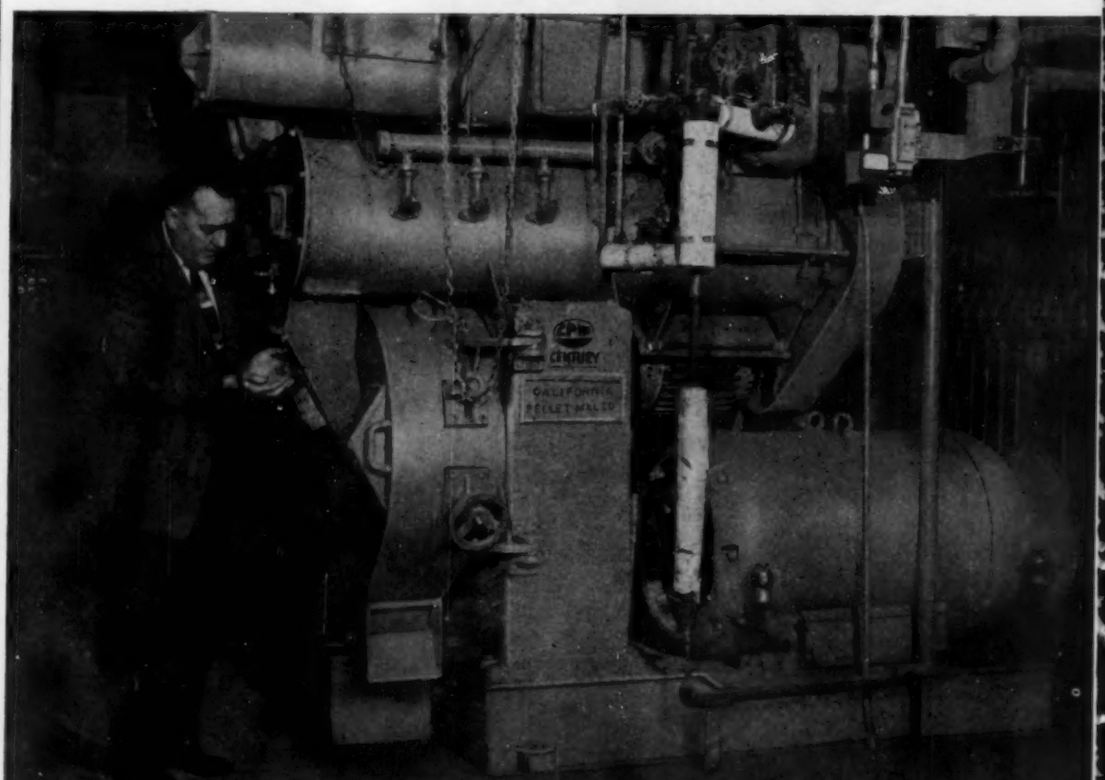
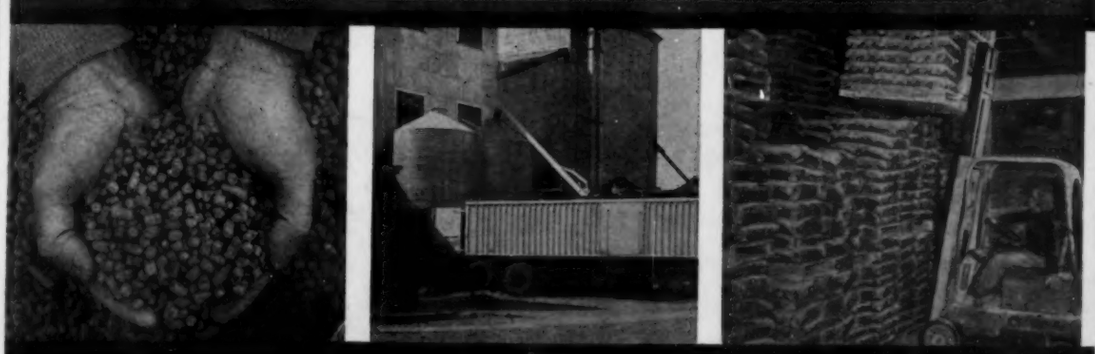


Mr. Will Brooks, Plant Manager at the Springfield Mill, Illinois Farm Supply Company, examines FS Brand "Perfect 30 Cattle Pellets," now in regular, high-capacity production on a battery of three standard CPM "CENTURY" M.P. Pellet Mills.



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USDA Issues New Egg Report for West Coast

WASHINGTON—A weekly report on the volume of eggs moving into Portland-Vancouver metropolitan area retail channels was released for the first time by the Agricultural Marketing Service's dairy and poultry market news branch, according to the U.S. Department of Agriculture.

The Portland-Vancouver egg report was released at the same time that improved versions of weekly reports were released from San Francisco, Los Angeles and Seattle. Market reports have been improved by increasing the number of cooperating firms reporting in each metropolitan area, and by adoption of estimating procedures.

Volume information will be obtained from or estimated for the metropolitan areas' food chains, milk distributing companies and wholesale or producer distributors who move an average of 100 or more cases of eggs weekly into retail channels, without duplication.

The volume information collected each week by mail questionnaires will be relased the following Tuesday, USDA said. The reports show estimated volume movement of eggs for the current and previous weeks, and the percentage change from the previous week.

The new Portland-Vancouver metropolitan area report contains information from 18 firms which move 90% of the eggs into the area's retail channels. About 75 egg handling firms are located in the area.

Cyanamid Gets FDA Okay on Pig Formula

NEW YORK—American Cyanamid Co. has received clearance from the Food & Drug Administration to market a special formula of Aureomycin chlortetracycline in oil for oral use with baby pigs. It will be marketed under the trade name of Aureomycin Pigdoser, and was developed for the prevention and treatment of bacterial scours and pneumonia in suckling pigs.

Pigdoser is packaged in a plastic disposable syringe containing 10 doses. The dosage is marked on the plunger which enables farmers to place 1 cc of the solution directly into the mouth of baby pigs. The antibiotic sticks to the tongue and does not run out of the mouth or into the lungs, according to Cyanamid.

An introductory offer of the new product is being made to animal health and feed outlets through March 31. The special promotion on Pigdoser combines the new product with Pigdex Injectable Iron, which is another product for baby pigs and is used to help control iron-deficiency anemia.

Dealers who purchase the new Pigdex Pig Pak containing five, 10-dose vials in units of six will also receive six syringes of Aureomycin Pigdoser in a combination package. A similar offer is made with Pigdex in 50-dose vials.

WASHINGTON OFFICERS — These men will head the Washington State Feed Assn. during the coming year. They were elected at the association's recent convention in Yakima. Walter Van Horn (left), J. W. Feed Co., Burlington, is the new president, and Arthur R. Hill (right), Arthur R. Hill Co., Inc., Seattle, is vice president. Not pictured are Mel Erickson, Nordquist Feed Mills, Redmond, Wash., who was elected secretary-treasurer, and J. G. Wilson, Seattle, renamed association manager.

J. J. Warren to Handle Barred Rock Strain

NORTH BROOKFIELD, MASS.—The breeding and distribution of Bennett Strain Barred Plymouth Rocks will be handled by the J. J. Warren organization, it was announced here by James J. Warren, Jr., general manager.

Mr. Warren said the Bennett Strain of Barred Rocks has been well known in the commercial egg production field. "In more recent years," he said, "it has been widely used as the female parent of the Black Sex Link and as the male parent in producing the Barred Cross. This nickability with leading strains of Rhode Island Reds led to its use by our firm in developing its Production Barred Crosses."

Mr. Warren announced that orders for Barred Rocks will be filled by the Bennett organization up until July 1. After that date, J. J. Warren will distribute breeding stock in the form of chicks on an open, non-franchise basis.

Present plans call for an expansion in pedigreeing and trapnesting operations. Beginning this month, pedigreed chicks are being hatched by J. J. Warren from matings supplied directly by Harry S. Bennett. Trapnesting of a large population of pedigreed females will get underway in July.

SUPPLY FIRM INCORPORATED

OWINGSVILLE, KY.—Owingsville (Kentucky) Farmers Supply, Inc., has filed articles of incorporation, listing $100,000 capitalization, to deal in farm supplies. Listed as incorporators are Earl W. Miller, Virgil V. Catron, Aitkin Darnell, Charles T. Anderson and James Morrow Richards.

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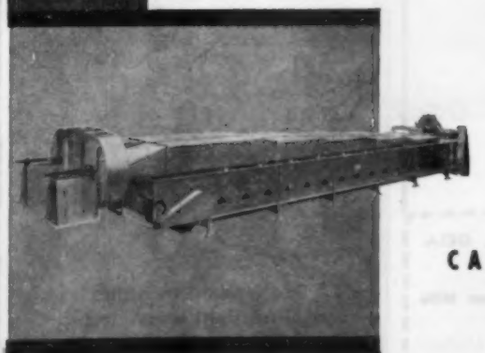
This is a multi-purpose CPM standard unit that handles *any* type of pelleting feed mix, whether it contains molasses or not. Extremely versatile, this CPM model does away with the need for a special pellet mill to produce high level molasses feeds only. Nor does it require an adapter head or other cumbersome changeover to switch from pelleting hard type pellets to molasses pellets. Where other machines may require a minimum of 30% molasses to operate properly, the "CENTURY" M.P. produces highest quality pellets at lowest cost per ton *regardless* of molasses content – from 0 to 30%!

Get all the facts on this remarkable mill today. See how you can cut costs, boost profits. Call your CPM representative or write us direct.



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This CPM self-cleaning horizontal cooler is designed for efficient handling of molasses pellets, regardless of molasses content, without jamming or breaking pellets.

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Engineering Company Formed in Portland

PORTLAND, ORE. — Mill Process Engineers, Inc., has been organized here to provide design and engineering services for the grain, flour, feed and chemical industries of the West.

The new organization is headed by Del McConnell, an experienced registered professional engineer. Several other experienced engineers will be associated with Mr. McConnell.

Activity of the firm's engineers has encompassed several feed mills, river grain receiving and loadout facilities, bulk relay stations, fertilizer mixing and handling, grain receiving and relay stations, multiple bin grain storage and drying projects and hay pelleting plants.

Company officials said the firm is "ready to handle any project from site development and plant design through to construction supervision and mill personnel training for new facilities."

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Drunk: "I live here."
Cop: "Why don't you go in?"
Drunk: "I lost my key."
Cop: "Then ring the bell."
Drunk: "I rang it an hour ago."
Cop: "Ring it again."
Drunk: "To heck with them; let 'em wait."

◆ ◆ ◆

A South American was describing his country to a North American woman.

"Bull fighting is our most popular sport," he told her.

"Isn't it revolting?" she asked.

"No," he smiled, "that's the second most popular sport."

◆ ◆ ◆

Conversation in a London pub:
"How did Bill die?"
"'E fell through some scaffolding."
"Whatever was 'e doing up there?"
"Being 'anged."

◆ ◆ ◆

A smile costs nothing, but gives much. It enriches those who receive without making poorer those who give. It takes but a moment, but the memory of it sometimes lasts forever. None of us is so rich or mighty that we can get along without it and none of us is so poor but that we cannot be made rich by it.

◆ ◆ ◆

Until a husband can get alimony by crossing his legs and winking at the judge, there's no such thing as equal rights.

◆ ◆ ◆

The man and his wife had been waiting in their stalled car when the highway police drove up.

"Glad you're here," said the husband, stepping out of the car. "Now, I'll acquaint you with the cause of the trouble."

The officer smiled and nodded politely to the woman. "Glad to know you, ma'am," he said.

◆ ◆ ◆

A child's question: "If the Lord gives us our daily bread, and Santa Claus brings the Christmas presents, and the stork brings the babies, then what's the use of having Daddy around?"

Have you heard the latest?

. . . She worked overtime *again* last night at milking time. Must be that Silage with SILO-JOY® forage flavor preservative that she's eating.

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California Cattle Numbers Down

WASHINGTON — The number of cattle and calves on feed for market as of Feb. 1 in Arizona and California was 11% below the number on feed Jan. 1 this year, according to the U.S. Department of Agriculture.

The total on feed dropped from 928,000 head Jan. 1 to 825,000 head Feb. 1.

On Feb. 1, 578,000 head of cattle and calves were on feed for market in California—13% below the number on feed Jan. 1. Placements of cattle and calves during January amounted to 72,000 head, compared with 123,000 head in December, 1959. Marketings of fed cattle from California feedlots during January are estimated at 157,000 head — 26% more than were marketed in December, 1959.

The number of cattle and calves on feed for market in Arizona on Feb. 1 totaled 247,000 head, a 7% decrease from the 265,000 head on feed a month earlier. Cattle and calves placed on feed during January totaled 14,000 head, compared with 32,000 head in December, 1959. Fed cattle marketed during January are estimated at 32,000 head, the same as December, 1959.

The number of steers and heifers marketed out of first hands for slaughter at 12 important livestock markets during January totaled 517,169 head, a 6% increase from the 488,331 head marketed during January, 1959. Marketings of steers at 372,480 head for January, 1960, compared with 372,404 head during the same month a year earlier. Heifer marketings out of first hands for slaughter totaled 144,689 head, compared with 115,927 head in January, 1959—a 25% increase.

Prime, choice and good quality steers and heifers totaled 470,987 head—an increase of 6% from January, 1959.

J. B. Ehrsam Names Company Sales Head

ENTERPRISE, KANSAS — J. B. Ehrsam & Sons Manufacturing Co. has announced the appointment of Donald B. Rupp as company sales manager.

He will have sales responsibility for the complete line of Ehrsam products. Mr. Rupp, a native of Washington, D.C., and an alumnus of Columbia University, is well known in the materials handling industry.

Mr. Rupp has announced the recent opening of new branch offices for the Ehrsam Co. in Chicago, Des Moines, and Hastings, Neb. These offices will supplement the offices now in existence in Kansas City, San Francisco, Fort Worth and Phoenix. Additional offices are being opened in Denver, Colo., and Atlanta, Ga.

The establishment of these offices is part of a sales office expansion program by the J. B. Ehrsam & Sons Manufacturing Co. "in order to provide improved customer service and help to satisfy the steadily expanding market for Ehrsam materials handling, feed and elevator and other equipment," Mr. Rupp said.

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NEWFIELD NEW JERSEY
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Plans Retirement

KANSAS CITY—After 47 years of service in the grain trade, William B. Young, president of Goffe & Carkener, Inc., will retire from active participation in the business this spring, it has been announced.

Following the announcement of this retirement, Goffe & Carkener directors elected new officers. Mr. Young was named chairman, a post he will hold until his full retirement about April 1. Richard A. Wood, formerly vice president, was named vice chairman of the board.

The new president is Harry F. Jackman, Jr., who has been secretary. He is succeeded as secretary by Edward Bumgardner of Lawrence, Kansas.

Hymie J. Sosland, who has been treasurer, was named executive vice president. Richard R. Jackman was named treasurer.

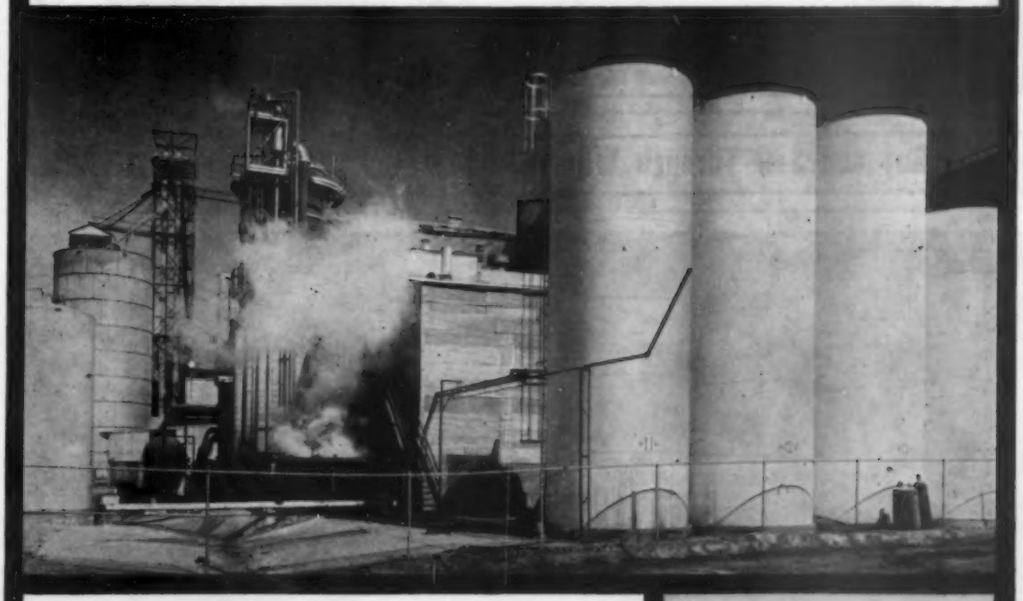
Dr. H. L. Fuller

Dr. H. S. Teague

Dr. C. F. Huffman

MARYLAND SPEAKERS—These three scientists will be guest speakers at the University of Maryland Nutrition Conference for Feed Manufacturers March 17-18 in the Shoreham Hotel in Washington, D.C. Left to right are Dr. H. L. Fuller, professor of poultry nutrition at the University of Georgia; Dr. H. S. Teague, associate professor of animal science at Ohio State University, and Dr. Carl F. Huffman, professor of dairy husbandry at Michigan State University. Dr. Fuller will talk on "Restricted Feeding of Production Type Pullets"; Dr. Teague will speak on "Newer Evidence Concerning the Feeding of Antibiotics to Swine," and Dr. Huffman will address the group on "The Economical Feeding of Lactating Cows."

This is the plant that processes the beans
to make the meal that's protein rich
to blend in feeds that farmers use
to keep poultry and livestock thrifty



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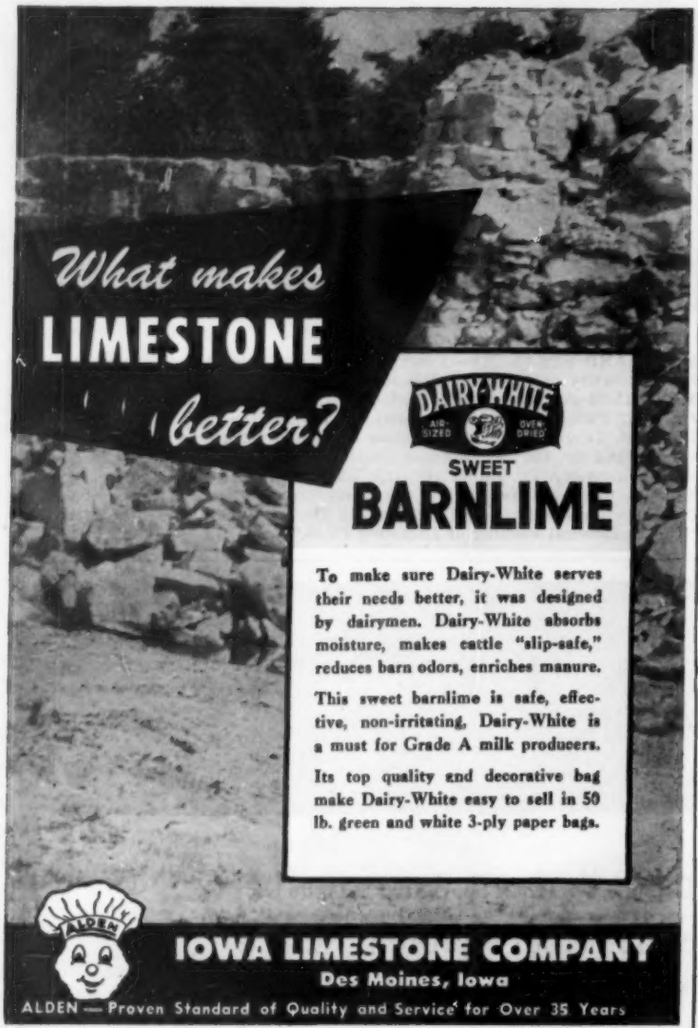
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Turkeys: Breeder Hens on Farms Jan. 1

State and division	Heavy breeds 1959 (thousands)	Heavy breeds 1960 (thousands)	Heavy breeds 1960 as % of 1959	Light breeds 1959 (thousands)	Light breeds 1960 (thousands)	Light breeds 1960 as % of 1959
			%			%
Maine	4	3	75	...	...	...
New Hampshire	16	14	88	...	...	...
Vermont	5	3	60	...	...	...
Massachusetts	21	21	100	...	...	...
Rhode Island	1	1	100	...	...	...
Connecticut	19	26	137	...	...	...
New York	40	28	70	1	...	...
New Jersey	9	10	111	1	1	100
Pennsylvania	47	45	96	5	4	80
North Atlantic	162	151	93	7	5	71
Ohio	111	101	91	82	54	66
Indiana	27	18	67	2	2	100
Illinois	31	32	103	4	3	75
Michigan	79	73	92	3	3	100
Wisconsin	94	84	89	2	2	100
East North Central	342	308	90	93	64	69
Minnesota	360	395	110	80	65	81
Iowa	158	177	112	21	20	95
Missouri	146	136	93	18	15	83
North Dakota	25	24	96	...	...	...
South Dakota	11	13	118	2	1	50
Nebraska	38	34	89	1	1	100
Kansas	33	35	106	5	3	60
West North Central	771	814	106	127	105	83
Delaware	3	2	67	...	...	...
Maryland	12	9	75	1	1	100
Virginia	65	49	75	162	110	68
West Virginia	9	9	100	21	12	57
North Carolina	59	62	105	...	...	...
South Carolina	54	46	85	3	1	33
Georgia	21	22	105	...	...	...
Florida	15	12	80	7	9	128
South Atlantic	238	211	89	194	134	69
Kentucky	45	42	93	1	1	100
Tennessee	12	13	108	1	...	...
Alabama	13	15	115	4	3	75
Mississippi	32	34	106	5	3	60
Arkansas	56	47	84	14	7	50
Louisiana	15	13	87	...	...	...
Oklahoma	49	45	92	14	4	30
Texas	306	211	69	78	42	54
South Central	528	420	80	117	60	51
Montana	3	2	67	...	...	...
Idaho	4	6	150	2	3	150
Wyoming	1	1	100	...	...	...
Colorado	8	8	100	...	...	...
New Mexico	4	6	150	...	...	...
Arizona	6	8	133	...	...	...
Utah	34	48	141	2	...	...
Washington	63	46	73	3	2	67
Oregon	193	184	95	30	25	83
California	761	803	106	22	22	100
Western	1,077	1,112	103	59	52	88
U. S.	3,118	3,016	97	597	420	70

USDA Reports 8% Decrease in Turkey Breeder Hens on Farms

WASHINGTON—There was an 8% decrease in the number of turkey breeder hens on farms Jan. 1, compared with the same period a year earlier, according to the U.S. Department of Agriculture. The number dropped from 3,715,000 last year to 3,436,000 on Jan. 1 this year.

Heavy breed turkey breeder hens were estimated at 3,016,000, compared with 3,118,000 on hand Jan. 1, 1959—a decrease of 3%. Light breed hens were estimated at 420,000, down 30% from Jan. 1, 1959. Compared to a year earlier, testings for pullorum disease from July through December, 1959, were down 5% for heavy breeds and 45% for light breeds. Heavy white breeds, which accounted for 25% of all heavies tested July-December, 1959, were 8% above the same period a year earlier.

In October, breeding flock owners in 15 of the most important states indicated their intentions to keep 2% less heavy breed hens than last year and 16% less light breed hens. This compares with the Jan. 1, 1960, inventory of 3% less heavy breed hens and 30% fewer light type hens. Growers, as of Jan. 1, indicated they intended to raise 6% more turkeys during 1960 than were raised during 1959. They planned an increase of 12% in heavy breeds and a decrease of 18% in light breeds. In order to meet these intentions with the limited numbers of breeders on hand Jan. 1, a closer utilization of eggs or an extended hatching season compared with 1959 will be necessary, according to USDA.

Number of heavy breed hens on Jan. 1, 1960, was below last year in all regions of the country except in the west north central and the west which were up from last year by 6% and 3%, respectively. Decreases amounted to 20% in the south central, 11% in the south Atlantic, 10% in the east north central and 7% in the north Atlantic states. The 10 leading states, with 74% of the heavy breed hens in the nation, ranked in the order of importance are California, Minnesota, Texas, Oregon, Iowa, Missouri, Ohio, Wisconsin, Michigan and North Carolina.

The number of light breed hens on farms Jan. 1 was below last year in all regions of the nation. Decreases were 49% in the south central, 31% in the south Atlantic and east north central, 29% in the north Atlantic, 17% in the west north central and 12% in the west. The nine leading

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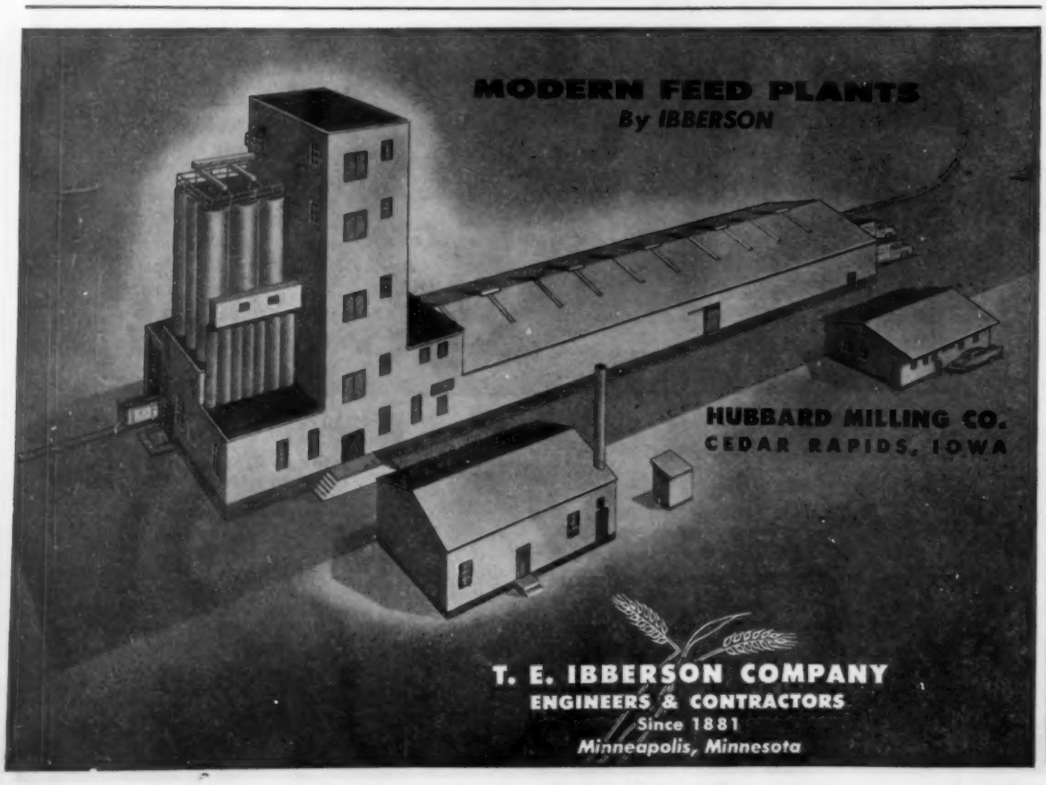

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FIGHTS CALF SCOURS AND PNEUMONIA TWO WAYS AT ONCE
Pen FZ

PROMOTION — Pen-FZ, a mastitis treatment, is now being advertised by Hess & Clark, Inc., Ashland, Ohio, in the once-a-year "Two Free With 10" tube promotion. This year the promotion contains the 20-tablet size can of two-way Calf Scour Tabs. The entire promotion is made up of 12 doz. tubes of Pen-FZ and six 20-tablet cans of Calf Scour Tabs.

states with 87% of the light breed hens are Virginia, Minnesota, Ohio, Texas, Oregon, California, Iowa, Missouri and West Virginia.

Volume Record Set By Washington Co-op

SEATTLE — An all-time record business volume of $67,555,049 and a new high of $4,243,276 in operating margins for distribution to northwestern farm families were transacted in 1959 by Washington Cooperative Farmers Assn., Harry J. Beernink, general manager, reported at the co-op's 43rd annual membership meeting Feb. 11 here.

Representatives of more than 40,000 member families who attended the session were advised a large majority vote favored changing the co-op's name to Western Farmers Assn. and to modernize by-laws to broaden activities.

It was announced that 1959 patronage dividends will be distributed in early March to farm members. These dividends were said to average $6.70 ton on all formula feeds, $9 for every $100 of farm supplies, 6% for seeds and 5½% return on dollar volume of fertilizers and farm chemicals purchased during 1959. Similar operating margins for turkeys and seeds marketed were returned at the close of the fiscal year last July, Mr. Beernink said.

In highlighting 1959 operations and announcing plans for the future, Mr. Beernink told members that egg receipts were up nearly 15% and egg production in the Northwest was nearing a balance with area demand.

Receipts of fryer chickens, he said, increased about 45%, "again making Northwest production in close relationship with demand."

"While receipts of turkeys marketed by the association increased over 50%, they moved into retail channels with a minimum of carryover and prices to growers were more favorable than anticipated earlier," Mr. Beernink reported.

Feeds purchased by members increased substantially, he said. New facilities were completed—including a large grain receiving, drying and storage unit at Granger, and bulk grain receiving installations at George, Moses Lake and Venner in the Yakima valley. Units at Eltopia and Royal Camp were enlarged.

He reported also that construction work was started on a new $1½-2 million push button feed mill at Portland. New farm service branches are being opened at Medfard and Salem, Ore., and a new farm service branch with bulk feed handling facilities is in operation at Junction City, Ore.

New farm service branches were constructed at Olympia and Moses Lake, and substantial additions were made to the co-op's seed mill at Spokane.

Altogether, the capital outlay for new facilities completed or now under construction exceeded $4¼ million, Mr. Beernink said.

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No. 7807—Copper Sulfate Block

Turkey Tone, a whey block containing copper sulfate to help prevent and control turkey diseases caused by mold, such as Trichomoniasis, Mycosis and Aspergillosis, is now being introduced nationally by Peebles' Specialty Products, Western Condensing Co., division of Foremost Dairies. The product is available in 50 lb. blocks. For details, check No. 7807 on the coupon and mail.

No. 7813—Swivel-Piler

The Swivel-Piler on "wheel mount" developed by Stephens-Adamson engineers speeds throwing and storing grain, sand or other granular small lump bulk materials to heights of 20 ft. over a radius of 50 ft. The machine is easily moved and operated

by one man, according to the company. Operating on a centrifugal action throwing principle, material is thrown mechanically in a solid stream like water from a hose from the short, endless high speed conveyor belt of the thrower unit. The centrifugal thrower unit is mounted on three rubber-tired wheels with roller bearings. The loading spout can be pushed, pulled or swiveled by a pivoted steering wheel. For details, check No. 7813 on the coupon and mail.

No. 7815—Sifter Data

Sprout, Waldron & Co., Inc., has prepared data on power use studies at a feed plant before and after installation of a Gyro-Whip corn meal sifter. The results are said to include an 11.6% reduction in power cost over a one-year period, a 65% reduction in wear on attrition mill plants and greater uniformity of the corn meal—the latter resulting in better pellets. For more details on the report, check No. 7815 on the coupon and mail.

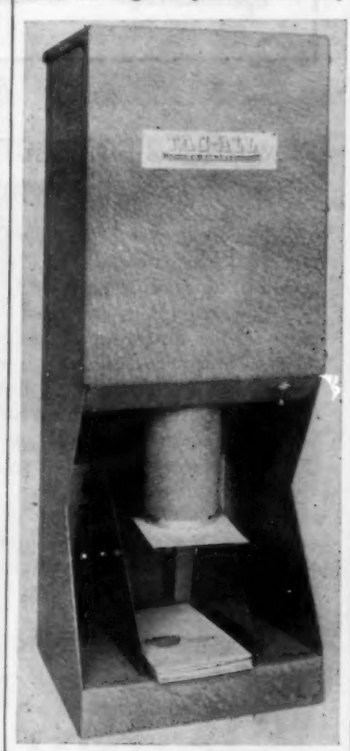
No. 7808—Cob Bin Door

Shelby Manufacturing Co. introduces a double cob bin door. The all-steel door is framed in 6 in. channels, and is manually operated by a double rack and pinion arrangement, through

the use of chain wheels. The door is available in five sizes. According to the company, the door "provides simple, economical storage and dispensation of cobs." For details, check No. 7808 on the coupon and mail.

No. 7812—Tag Handling Machine

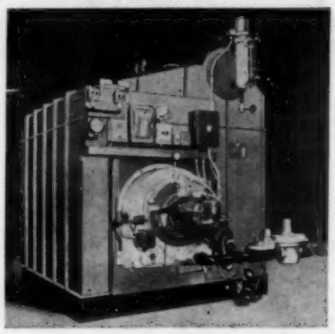
A tag handling machine called Tag-All is being manufactured by K & S Metal Products Co. and distributed to user-dealers or salesmen by Hanson Sales Co. Tags are placed in the tray



at the bottom of the machine and by means of vacuum, a single tag is raised from the stack and held until the operator removes the tag. The portable machine adapts itself to any speed operation, according to the company. For details, check No. 7812 on the coupon and mail.

No. 7810—Water-Tube Steam Boilers

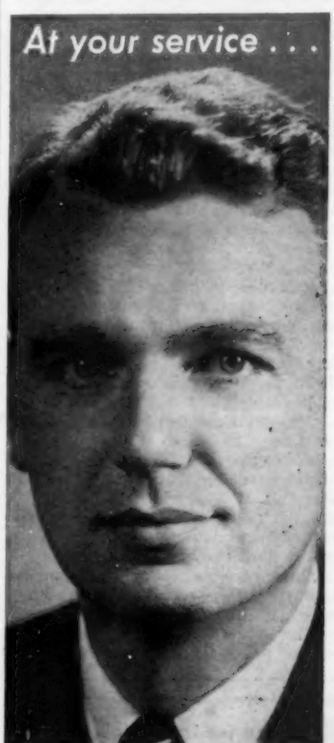
For steam requirements from 10 to 200 h.p. capacity, and up to 500 lb. design pressure, Nebraska Boiler Co., Inc., offers Series 20-22-23 in its line of water-tube steam boilers. According to the company, the boilers fea-



ture natural circulation, uniform, positive heat transfer, high quality steam and low cost steam generation. The factory assembled boilers are complete with trimming, firing and control equipment. For details, check No. 7810 on the coupon and mail.

No. 7811—Static Electricity Neutralizer

Statikil, Inc., announces a formula is available packaged in self-spraying cans or bulk for neutralizing static electricity. Among some of the suggested industrial uses are for industrial machinery, meters and indicators. The company says the product is effective as a spark retardent in hazardous operations. Effect of the product is cumulative so that continued use provides a durable static freedom. It dries instantly and invisibly, and can be applied by swab-



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- ☐ No. 7809—Animal Health Promotion
- ☐ No. 7810—Water-Tube Steam Boilers
- ☐ No. 7811—Static Electricity Neutralizer
- ☐ No. 7812—Tag Handling Machine
- ☐ No. 7813—Swivel-Piler
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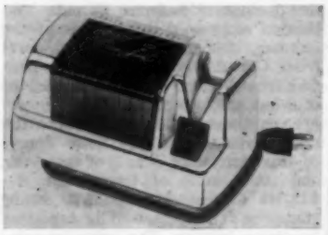
No. 7809—Animal Health Promotion

A spring promotion of animal health products, featuring a "Dixie Special" and a premium for consumers, has been announced by Chas. Pfizer & Co., Inc. The "Dixie Special" package line will include an assortment of seven different animal health



products for use in fighting diseases and stresses in broilers, layers, cattle, hogs and sheep. Nationally, a minimum order of products will qualify any retailer for a customer contest premium—an electric knife sharpener. For details, check No. 7809 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7773—Loader and Piler, Stephens-Adamson Manufacturing Co.

No. 7774—Round chick fount, National Ideal Co.

No. 7775—Calf formula promotion, National Vitamin Products Co.

No. 7776—Bovitrin promotion, Merck & Co., Inc.

No. 7777—Picking machine, Gainesville Machine Co., Inc.

No. 7778—New Terramycin package, Chas. Pfizer & Co., Inc.

No. 7779—Vitamin K assay method, Heterochemical Corp.

No. 7780—Feed mill planning, Myers-Sherman Co.

No. 7781—Screener catalog, Orville Simpson Co.

No. 7782—Dry dog food, Valley Mills.

No. 7783—Guaranteed roller mill, Myers-Sherman Co.

No. 7784—Dehydration equipment, Edw. Renneburg & Sons Co.

No. 7785—Bulk handling report, Fuller Co.

No. 7786—Loading bulletin, Magline, Inc.

No. 7787—Crop dryers, Lennox Industries, Inc.

No. 7788—Pole-type brooder building, E. G. Clinton Co.

No. 7789—Cut-off system, Howe Scale Co.

No. 7790—Container system booklet, Fruehauf Trailer Co.

No. 7791—Mill planning booklet, Myers-Sherman Co.

No. 7792—Cattle feed fortifier, Dawes Laboratories, Inc.

No. 7793—Antibiotic as silage preservative, Commercial Solvents Corp.

No. 7794—Financing plan, Daffin Manufacturing Co.

No. 7795—Egg cartons, Tobias Enterprises.

No. 7796—Merchandising program, National Vitamin Products Co.

No. 7797—Poultry disease treatment, Abbott Laboratories.

No. 7798—Proportioning pump bulletin, B-I-F Industries.

No. 7799—Bulk feed body, North American Manufacturing Co.

No. 7800—Hinged side panel, Sprout, Waldron & Co., Inc.

No. 7801—Bulk truck service, Productive Acres Manufacturing Co., Inc.

No. 7802—Plastic shipping sack, Owens-Illinois Glass Co.

No. 7803—Weighing system brochure, Howe Scale Co.

No. 7804—Square hole nests, James Manufacturing Co.

No. 7805—Antibiotic supplement, S. B. Penick & Co.

No. 7806—Super concentrate plan, Ultra-Life Laboratories.

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Says Carl Woizeski, General Manager of Larsen Co-operative Co., Larsen, Wisconsin.

Carl Woizeski, above, manages the Larsen Co-operative Co. and employs eight men in the feed department.

Three Strong-Scott Triple Action Mixers are mounted overhead. A screw conveyor carries material out for bulk discharge into trucks.

The Strong-Scott Quick-Change Hammermill is the answer to the grinding needs at Larsen.

"We are presently operating four Strong-Scott Triple Action Mixers, a 5-ton, two 2-ton and a 1-ton, plus one molasses mixer," says Carl. "These do a good job of mixing and I guess the fact that our customers are well satisfied bears this out.

"We can run 12 ton an hour in our Strong-Scott Molasses Mixer and get excellent results. Maintenance on our Strong-Scott equipment is almost nil. In the one year we have had our Strong-Scott Hammermill, we have never had to change a screen. They are wonderful," concluded Carl. The contractor at Larsen, recently completing the newest addition, was A. Winterfeldt.

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Livestock, Poultry Inventory Shows Gain, But Value Down

WASHINGTON — The annual report from the U.S. Department of Agriculture on the Jan. 1 census of livestock and poultry on farms and ranches shows that significant gains were made last year in cattle, hog and sheep numbers—but the count also reveals that there's been a slow-up in farm poultry flocks.

USDA reported that the Jan. 1 index of livestock and poultry numbers —which combines species on the basis of economic importance—was 4% higher than a year earlier and the second highest on record. The previous all-time peak was established Jan. 1, 1944.

Although records were set in the number of animals on hand Jan. 1, the total inventory value of all livestock and poultry on farms and ranches was down 10% from a year earlier to $16.2 billion. This is because the average per head value of most of the animals declined to an extent great enough to more than offset the increase in numbers.

The following trend capsule, which shows how livestock and poultry numbers shifted from Jan. 1, 1959, to Jan. 1, 1960, is followed up by details gleaned from the USDA inventory report.

Livestock and Poultry on Farms and Ranches Jan. 1

Class of livestock and poultry	Average 1949-58	1958	1959	1960	1960 as % of 1959
	1,000 head				%
Cattle	89,612	93,350	96,650	101,520	105
Cows 2 years + for milk†	23,361	22,233	21,488	21,331	99
Hogs	54,478	50,980	56,924	58,464	103
All sheep	31,167	31,337	32,945	33,621	102
Stock sheep‡	27,100	27,327	28,497	29,481	103
Horses and mules	5,482	3,354	3,142	3,089	98
Chickens	407,448	370,884	383,529	366,859	96
Turkeys	5,173	5,542	5,923	5,673	96

†Included in cattle. ‡Included in all sheep.

● Cattle numbers at new high of 101.5 million head—up 5% from a year earlier; beef cow numbers up 7% and all other classes of beef stock also above a year earlier; milk cows two years old and over down 1% to the smallest count since 1917.

● Three per cent gain in hog numbers.

● Inventories of all sheep and lambs up 2%; stock sheep numbers up 3%.

● Inventories of chickens (excluding commercial broilers) and turkeys off 4%.

CATTLE — Cattle and calves on farms and ranches in the U.S. increased 5% during 1959, and reached a new high of 101,520,000 head Jan. 1—13% above the 1949-58 average and 5% greater than the previous record of Jan. 1, 1956.

USDA said total cattle and calves increased 9% or 8,170,000 head during the two-year period from Jan. 1, 1958, to Jan. 1, 1960, which represented an upward movement in the cattle cycle. This 9% increase, USDA noted, is a little sharper than the first two years' upturn of the last three cattle cycles. It is, however, only a moderate increase when compared with some contiguous two-year periods in the build-up phases of previous cycles.

An abundance of feed in most areas of the country is considered an important factor in the larger cattle inventories. All states except Maine, Vermont, Massachusetts, Rhode Island and Delaware showed an increase in cattle numbers during 1959. The higher inventory in most states resulted mainly from an increase in classes of cattle kept for purposes other than milk production, USDA said.

While 7% more cattle and calves kept mainly for beef were counted Jan. 1, 1960, than a year earlier, the number of milk cows and heifers two years and over continued to fall off during 1959. The milk cow and heifer total of 21,331,000 head Jan. 1 was the lowest since 1917 and 1% or 157,000 head below the number on hand a year earlier.

The downward trend in milk cow numbers has been underway since the peak was reached Jan. 1, 1945. The western and south Atlantic regions were the only areas showing increases in milk cow numbers from Jan. 1, 1959, to Jan. 1, 1960.

Slaughter, Feeding Trends

Commercial slaughter of cattle and calves in 1959 totaled 30,724,500 head, a decline of 7% from 1958 and the lowest since 1952.

This year started out with a record number of cattle on feed for market. On Jan. 1, 26 states for which comparable data are available, reported 7,198,000 head, an increase of 9% over a year earlier. An additional 366,000 head of cattle and calves were on feed for market in 11 southeastern states Jan. 1 this year, for a total of 7,564,000 head.

Imports of 695,000 head of live cattle during 1959 from Canada and Mexico were only three fifths of the number imported in 1958. Imports from Canada were only about half, and from Mexico about three fourths of what they were in 1958.

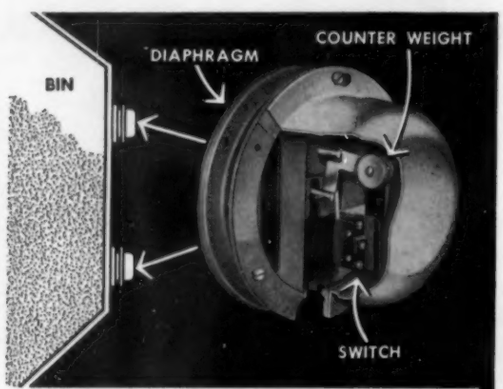
Even though the number of cattle and calves totaled 5% more Jan. 1 of this year than Jan. 1 of last year, the total value of these animals—$13,841 million—dropped 6% during the year. This situation is explained by these factors: The average value per head of all cattle was down 11%, milk cows down 5%, hogs down 42%, stock sheep down 19% and chickens down 17%. The average value of turkeys gained 6% and for horses and mules the gain was 11%.

More specifically, the Jan. 1, 1960, value per head of all cattle and calves averaged $136, compared with $153 Jan. 1, 1959; the total value of milk cows two years old and over Jan. 1, 1960, was $4,436 million, compared with $4,715 million Jan. 1, 1959, and the value per head of milk cows was $208 this Jan. 1 compared with $219 a year earlier.

HOGS—USDA reported that hogs and pigs on farms and ranches Jan. 1 totaled 58,464,000 head—3% more than a year earlier, 7% above the 10-year average, and the largest for the date since 1952.

Compared with a year earlier, hog numbers increased in all regions of the country. Increases of the largest percentages were in states outside the Corn Belt. The biggest jump—11%—occurred in the south central states.

Hog numbers were up only 1% in the north central states, which ac-



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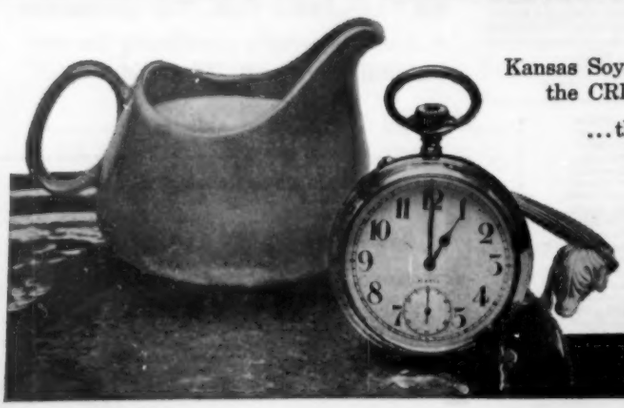

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OFFICERS ELECTED—Newly elected officers of the American Dehydrators Assn. are (left to right): Jerry Fielder, Dixon (California) Dryer Co., 1st vice president; J. M. Schrum, Sugarland Industries, Inc., Sugar Land, Texas, president, and Wm. H. Healey, Gothenburg (Nebraska) Feed Products Co., 2nd vice president.

count for about 73% of the U.S. total. The two principal states—Iowa and Illinois—showed increases of 1 and 4%, respectively.

Hogs under six months old on farms Jan. 1 totaled 38,749,000 head —3% more than a year earlier, and the second largest Jan. 1 number in 41 years of record. Market hogs over six months old, not including sows and gilts kept for farrowing, on hand Jan. 1 totaled 11,478,000 head—the largest number since 1956.

Only on Jan. 1, 1944, were there more hogs and pigs under six months old on farms and ranches than this year. The increase in the number of hogs and pigs under six months old, compared with a year earlier, reflects the large 1959 fall pig crop.

USDA officials noted that the increased efficiency in raising hogs to market weights at an earlier age is demonstrated by the smaller percentage in recent years that the number of market hogs over six months old is of the Jan. 1 total.

The value of all hogs Jan. 1 was $1,084 million—a big 40% drop from the $1,820 million value of a year earlier. The lower value this year was due to a sharp drop in value per head—$18.50 compared with $32.

POULTRY—The Jan. 1 inventory of chickens on farms (excluding commercial broilers) was 366,859,000—down 4% from a year earlier. The Jan. 1 total was below a year earlier in all regions except for increases of 1% in the south Atlantic and 3% in the West.

Of the total number of hens and pullets on hand Jan. 1, 1960, 64% were pullets and 36% were hens, compared with 67% pullets and 33% hens a year earlier.

The total value of all chickens (excluding commercial broilers) on farms Jan. 1, 1960, was $386,441,000, a decrease of 20% from Jan. 1, 1959. The average value per head was $1.05, compared with $1.26 a year earlier—a decrease of 17%.

Pullets totaled 223,838,000 Jan. 1, down 8% from the same date a year earlier. Pullet numbers were below a year earlier in all regions except in the West, which was up 4%.

Holdings of hens Jan. 1, 1960, totaled 125,514,000—an increase of 5% from Jan. 1, 1959. All regions showed increases from a year earlier, with one exception—the north Atlantic region.

Turkeys on farms (excluding turkey-fryers) Jan. 1 totaled 5,673,000, a decrease of 4% from a year earlier, but 10% above the average. Heavy breeds counted Jan. 1 were estimated at 5,079,000, practically the same count of a year earlier. Light breed turkeys on hand totaled 594,000, compared with 847,000 Jan. 1, 1959—a decrease of 30%.

Breeder hens on farms Jan. 1 totaled 3,436,000, which amounts to a decrease of about 8%. Owners of breeder hens in 15 of the most important states indicated in October that they expected to keep 2% fewer heavy breed hens and 16% fewer light breed hens than at the beginning of the 1959 season. The January inventory showed holdings of 3% less heavy breed hens and 30% less light breed hens.

SHEEP—USDA reported that the number of stock sheep and lambs on farms and ranches Jan. 1—29,481,000 head—was 3% above the 1959 figure and was the largest inventory number since Jan. 1, 1948. The number of sheep and lambs on feed for market—4,140,000 head—was 7% less than a year earlier. All sheep and lambs, including those on feed for market, totaled 33,621,000 head, a gain of 2% from Jan. 1, 1959.

Total stock sheep numbers in the 13 western states increased 6% in 1959—the third consecutive year this group of states has registered a gain. The 35 native states were down 1%, after five consecutive years of increasing numbers.

The total value of stock sheep on farms and ranches Jan. 1 was $487 million—a drop of 16% from a year earlier and 2% below the 1949-58 average of $495 million. The average value per head Jan. 1 was $16.50, which is substantially below the $20.30 per head value of a year earlier and the average of $18.20.

OTHER ANIMALS—Horses and mules on farms Jan. 1 totaled 3,089,000 head—2% below the year-earlier figure. Although numbers continued downward during 1959, the rate of decline was the smallest since 1940.

The number of all goats and kids in Texas was 6% more than the 3,150,000 reported a year ago.

The Crop Reporting Board of the Agricultural Marketing Service makes this report on numbers and value of livestock and poultry on farms (including ranches) as of Jan. 1 from reports furnished direct by livestock and poultry producers, reports collected in cooperation with the Post Office Department through the rural mail carriers and data assembled by field statisticians and cooperating state agencies. Livestock and poultry not on farms are excluded from the inventory.

NEW MEXICO FEED FIRM

SANTA FE, N.M.—The State Corporation Commission has issued a charter to Feed & Ranch Supplies, Inc., a new Albuquerque firm. The incorporators are P. L. Jones, Sid Pipkin, Earnest Knott and J. L. Powell. A total of $200,000 capital is authorized with $72,000 issued initially. The firm will deal in livestock and poultry feeds.

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Cattlemen's Group Says Cattle Count Veers from Course

DENVER—An analysis of the Jan. 1 estimates of cattle numbers, as released this week by the U.S. Department of Agriculture, has led officials of the American National Cattlemens Assn., Denver, to observe that the one-year increase of less than 5 million head was less than could have been expected if the current cycle followed previous patterns.

Cattle numbers stood on Jan. 1, 1960, at 101,520,000, compared to 96,650,000 a year ago. Beef cattle numbers (all those classed as "not-for-milk") this year were a record 68,536,000, an increase of 4,621,000 over a year ago. However, observers point out that even larger one-year increases were noted in the 1949-53 buildup period.

Breaking down the beef cattle category, similar "non-record" increases were noted by the association, even though current figures may be at an all-time high. For instance, beef cows, two years old and over, stood at 27,263,000 this year, compared with 25,513,000 a year ago and with 25,659,000 in the previous high year of 1955.

Beef heifer figures are 7,419,000 for 1960; 6,820,000 for 1959, and 6,535,000 for 1953, the previous cycle topper. Calf numbers are 21,093,000 for 1960; 19,698,000 for 1959 and 18,979,000 for 1956, the previous high.

Steers were counted at 11,009,000 on Jan. 1, 1960; 10,233,000 on the same date in 1959. The most immediate previous high point was in 1956 with 9,560,000 on hand. However, the nation had in excess of 10,000,000 steers several times before 1920, the association notes.

Regional Increases

Biggest beef herd increases, areawise, came in the south central and south Atlantic regions, which accounted for a combined increase of 1,896,000. The north central region had an increase of 1,721,000, with the 11 western states chalking up a boost of 923,000 head. Only one major beef cattle producing or feeding state showed a decrease in any category from 1959, although many were down from previous peaks for several categories.

The sole state showing a reduction in any beef category was Florida, which dropped 11,000 head in beef heifers and remained the same, 807,000, in beef cows. However, Florida cattlemen occupied their pastures with an additional 91,000 calves and steers over last year's estimated numbers.

Texas once again led all states in beef cattle numbers with 8,177,000, compared with 1959's 7,402,000. Following closest behind is Iowa with 5,288,000. Not far behind is Nebraska with 4,734,000, with Kansas also in the upper bracket with 4,034,000.

Leading states for beef cows are Texas, 4,296,000; Nebraska, 1,591,000; Oklahoma, 1,418,000; South Dakota, 1,305,000; Kansas, 1,262,000; Missouri, 1,184,000; and Montana, 1,164,000. Heifer leaders include Texas (765,000), Iowa (567,000), Nebraska (529,000), Kansas (420,000), California (387,000) and Colorado (334,000).

Texas also has the greatest number of calves, 2,357,000, but is followed closely by Iowa, 2,133,000. Other heavy calf numbers are in Nebraska, 1,613,000; Kansas, 1,517,000; Missouri, 1,015,000; and South Dakota, 1,000,000.

Iowa takes the lead in steer numbers with 1,547,000, followed by Illinois (950,000), Nebraska (926,000), California (793,000) and Kansas (767,000).

"Increasing Vulnerability"

Association statisticians observed that the continuing increase in breeding stock, although not as great as had been earlier feared at the time that warnings were issued last spring, portends increasing "vulnerability" to drouth and economic factors "unless stockmen pay close attention to orderly marketing and to shifting conditions in the months ahead."

The heavy supplies of steers and calves, already indicated through the recent cattle-on-feed report, will have a more immediate effect and can cause disruption if they also are not marketed in an orderly fashion, the association said.

St. Joseph Meeting

ST. JOSEPH, MO.—The St. Joseph Feed, Seed, Grain & Fertilizer Club will meet March 17 to hear Sam Fine, Food & Drug Administrator for the Kansas City district, discuss "Problems with Agricultural Chemicals." Details, including time and place for the meeting, will be announced at a later date, said Webb Embrey, secretary of the club.

You save his pigs (and keep his business) when you deliver nf-180 scours control within hours

That's Russ McKarns, a typical hog feed customer, in the photo. When a scours epidemic hit his 600 feeder pigs, Russ wanted help. Not next week. Right now! So he called his feed company.

Next morning he was feeding a test group of scouring pigs a medicated ration containing 6 lbs. of nf-180 per ton.

"They showed improvement right away," says McKarns. "Within a week they were just about normal. At market they weighed just as much as the hogs that weren't sick at all. But the sick pigs I had on the other treatment (not nf-180) kept on showing symptoms from time to time and never did gain right. This nf-180 can keep you in the hog business even if your place is badly infected with scours. We've got a lot invested here and we've got to make a go of the hog business."

Unusual luck? Not at all. One commercial feed company ran more than two dozen field trials, using nf-180 for scours control. In each test, scouring decreased in 24-48 hours . . . almost stopped within 72 hours. Conclusion:

nf-180 at the 6-lb.-per-ton level... used according to directions (fed for 14 days) and with good management... is a practical method for control of enteritis in hog production.

Certainly, there are a number of products used for scours control. They vary in effectiveness. But for swift, effective control of necrotic enteritis and vibrionic dysentery, your best bet is nf-180... proved in research, field tests, and extensive on-the-farm use.

The feed man who delivers effective scours control within hours after a call for help stands to win lasting customer loyalty. He also builds a solid reputation for service. This, in turn, increases chances of gaining new customers . . . developing new business.

FREE INFORMATION KIT

Be ready to step in when your next call for help comes from a customer with scouring hogs. Have nf-180 on hand. To get more facts on nf-180 scours control, write for a free swine information kit. For fast shipment of nf-180, get in touch with your Hess & Clark representative . . . or call us collect. Hess & Clark, Dept. M-14, Ashland, Ohio.

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Staley Manufacturing Promotes H. H. Hise

DECATUR, ILL.—Promotion of H. H. Hise, to division manager of the A. E. Staley Manufacturing Co. was announced by Roy L. Rollins, vice president.

H. H. Hise

This followed announcement by E. K. Scheiter, president of the Decatur corn, soybean, feed and chemical processing concern, that the company's purchasing organization would be given division status, effective immediately, "in recognition of the growing scope and importance of purchasing activities under Mr. Hise's management."

Mr. Hise has been with the company 34 years and has been purchasing agent and department manager since 1944.

In his new position, Mr. Hise will continue in charge of the company's purchasing organization, which he has headed for the past 15 years and with which he has been associated during all of his 34 years with the company, Mr. Rollins said. Purchasing was previously a department of the manufacturing division.

Kent Feeds Banquets

MUSCATINE, IOWA—More than 400 turkey growers attended the recent annual series of Kent turkey grower banquets sponsored by Kent Feeds, Inc. Banquets were held at Charles City, Ames and Wellman, Iowa.

Talks were given by Robert Eskridge on the Kent associated grower plan, by Dr. C. J. Lewis on Kent's new Big Ten turkey feeding program, and by J. V. Rowe, public relations representative for DX Sunray Oil Co., Waterloo, Iowa.

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One man can easily process a complete batch in less than 20 minutes. For example, suppose your formula calls for 1200 pounds of ground corn and 800 pounds of supplement. The 1200 pounds of corn can be automatically ground and delivered into the mixing chamber in about the same amount of time it takes a man to open eight 100 pound bags of supplement and dump them into the mixer hopper. When the mixing is completed, the same man can handle the sacking. Time and labor are cut to a minimum.

But that's only part of the profit story. Superior grinding and mixing efficiency is guaranteed. Operation is smooth and noiseless. Power costs are reduced because two low horsepower motors do the entire job.

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IDEAS TO HELP YOUR CUSTOMERS

Filled Feeders Waste Feed

Completely filling poultry feeders is likely to result in a great deal of feed being wasted.

In a study conducted by the Georgia Agricultural Experiment Station it was found that feed losses averaged as high as 45% when the feeders were filled. When filled only two thirds full, the waste was 15%; when half full, 5%, and when one third full, 2%.

The Georgia researchers recommend that hanging type feeders should be adjusted to feed out limited amounts of feed and should be about shoulder high to the birds. Automatic feeders, they suggest, should be adjusted to run one half full or less.

◆

Key to Lamb Profits

Well managed farm sheep flocks can provide farmers in certain parts of the country with favorable profits. And it's important to realize that the return over cost is usually based on the kind of a lamb crop received, says L. J. Kortan, associate animal husbandry specialist, South Dakota State College.

Mr. Kortan says the cost per ewe will range from $18 to $21. This includes feed, veterinary expenses, taxes, insurance, depreciation on both the animals and equipment, repairs and miscellaneous expenses.

A 140% lamb crop will pay the producer about $10.20 per ewe for labor, while a 100% lamb crop will return only about $3 per ewe. These figures are based on lambs priced at $18 cwt. and a $5 wool clip for each ewe.

◆

Confined Pullets Cut Costs

Confinement rearing of pullets showed about 9% lower total costs, excluding labor, than range rearing, in a study of Iowa flock records.

Paul Walther, Iowa State University extension poultryman, says labor costs for confined birds were cut 16%, feed consumption was 9% less and mortality was 48% less than for birds on range.

Confinement rearing requires less labor, he explains, because feed storage is easily accomplished, water is piped into the house and there is no building movement nor scattered buildings.

Initial building costs are about twice as high for a permanent structure for confinement rearing than for a range house, Mr. Walther reports, but the house lasts about twice as long. The cost per pullet per year for housing is nearly equal.

There is, however, less land investment in confinement rearing, Mr. Walther notes. A good pullet range is worth $5@10 acre per 100 birds.

Mortality is reduced in confinement because losses due to predators are eliminated, Mr. Walther says. There is also a reduced parasite problem because the parasite carriers, such as sparrows and other wild birds, can be kept out of the closed house.

Unfavorable weather is another problem avoided with confinement rearing, according to Mr. Walther. Insulated pullet rearing houses are cooler in the summer and warmer in the winter, he says.

"With modern feeds there is little difference in the productive potential of either confinement or range rearing," he comments.

◆

Cow Feeding Fallacies

There are six fallacies that should and can be overcome in present feeding programs for milk cows, Prof. C. Hilton Boynton, extension dairy specialist, declared at a recent forage seminar held at the University of New Hampshire.

He listed the feeding faults as follows:

1. Failure to recognize the total feeding capacity of the modern cow.
2. The mistake of feeding grain ac-

You can sell best

...and customer satisfaction "comes in Burlap!"

Have you ever added up the inducements you can offer when you sell sacked feed in burlap? They can help you in selling. Here they are:

1. *A discount* on every ton of feed, when the mill provides a return-bag program.
2. *Simplified inventory* for the customer.
3. *Identification* for medicated feeds.
4. *Non-separation* of formula-ingredients.
5. *Your prices* are competitive with returnable burlap bags.
6. *Service*...you can give small customers as good delivery service as large customers (and on the same route).
7. *Bulk customers* can be served with bag-to-bulk trucks.
8. *Quantities* can be bought *as needed.*
9. Feed in burlap bags is *sanitary and free from contamination.*
10. *Accurate weights* are assured in a burlap bag.
11. *Fifty-pound* as well as 100-lb. bags can be offered.
12. Farmers have many uses for empty bags...only burlap serves them so well!

Quite a few selling-points, don't you agree? Next time you're selling a new customer, remember there's a lot to be said for burlap bags!

Just ask your own customers—they'll tell you that burlap

Is strong — takes dragging, dropping, *man-handling* — any tough job on the farm.

Laughs at sudden showers — wetness or dampness can't weaken it.

Saves money — extra value from re-sale and re-use.

Gives good ventilation — keeps farm supplies and products fresh.

Saves storage space — stacks to any height without slipping.

Has 1000 uses — always in demand on the farm (popular with farm wives, too!)

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cording to the production of the cow, irrespective of the quality of the forage.

3. There is far from sufficient top quality roughage grown and fed.

4. The mistake of underfeeding heavy producers and overfeeding low producers.

5. Failure to meet bodily maintenance requirements of pregnancy and growth of immature animals.

6. Failure to adjust feed intake to forage quality.

◆

Coccidiosis Control

Care, sanitation and the well-timed use of drugs have been urged by a Vermont Extension Service veterinarian as measures in the poultryman's struggle against coccidiosis in his flock.

Dr. James Wadsworth, animal pathologist, says the poultryman wages a "never-ending battle" against parasites in chickens and that coccidiosis is one of the most troublesome of these parasites.

How to control the disease? Dr. Wadsworth says it's difficult to do the job by sanitation alone. But it plays a vital part.

"Be sure to keep the poultry litter dry, especially around the waterers," says the veterinarian. "Wear separate shoes or overshoes in the brooder house. Strict sanitation is a must."

Also, says Dr. Wadsworth, many effective drugs are available to both treat and prevent coccidiosis. "Well-timed administration of preventive drugs is a sound practice, especially when stress periods are anticipated."

◆

Feeder Pigs Top Buy Now

Now—or at least before spring—is a good time for hog producers to buy feeder pigs. Since 1955, winter-bought feeder pigs made higher gross margins than pigs bought at any other time of the year, according to a University of Minnesota extension farm management specialist.

Prof. Paul Hasbargen says the reason is that the hog market usually hits a peak in summer when the hogs bought in winter are ready to ship.

"Gross margin," he explains, "is the difference between selling price for a market hog and what the farmer paid for the animal as a 35-lb. feeder pig."

In arriving at his recommendation, Prof. Hasbargen compared 1958-59 feeder pig prices at Little Falls, Minn., with prices for 210-lb. market hogs at South St. Paul. He figured an average of five months for pigs to reach market weight, and allowed $2 per head for shipping costs.

Pigs bought in February averaged the highest gross margin of all—$27.56 per head. December and January-bought pigs weren't far behind.

For those bought in June, though, gross margin was down to $19.68 each. August-October was a little better; pigs bought in this period made gross margins of about $22 per head or slightly higher.

Even though average annual returns varied widely from one year to the next, the advantage for winter-bought feeders stayed proportionately about the same.

Top-quality pigs, Prof. Hasbargen says, could be bought up to late March and still be at market weight for the summer peak. Even though he figured five months of feeding, four months is all it takes for a fast-growing hog.

"Why don't you get some chickens? You get enough feed from the mill to keep us in eggs."

Penick & Co. Offers 'Dollars for Data'

NEW YORK—A "Dollars-for-Data" offer to feed mixers using Fortracin antibiotic supplement in poultry feed has been announced by S. B. Penick & Co.

Penick will pay $5,000 for weight-gain, feed-efficiency and other data on flocks fed a Fortracin-containing diet.

Purpose of the "Dollars-for-Data" program, company officials said, is to demonstrate quickly with specific information from users' day-to-day records "the remarkable degree to which Fortracin, used under normal operating conditions, matches its success in broiler tests."

To receive payments under the plan, officials stated, no difficult record-keeping or reporting is required. Simple fill-in forms will be supplied and only routinely-kept information is requested.

Fortracin is a non-metallic salt of bacitracin which Penick says is not a crude residue or by-product, but a purified antibiotic containing no culture fermentation insolubles. It is available in 10, 25 and 100-gm. concentrations.

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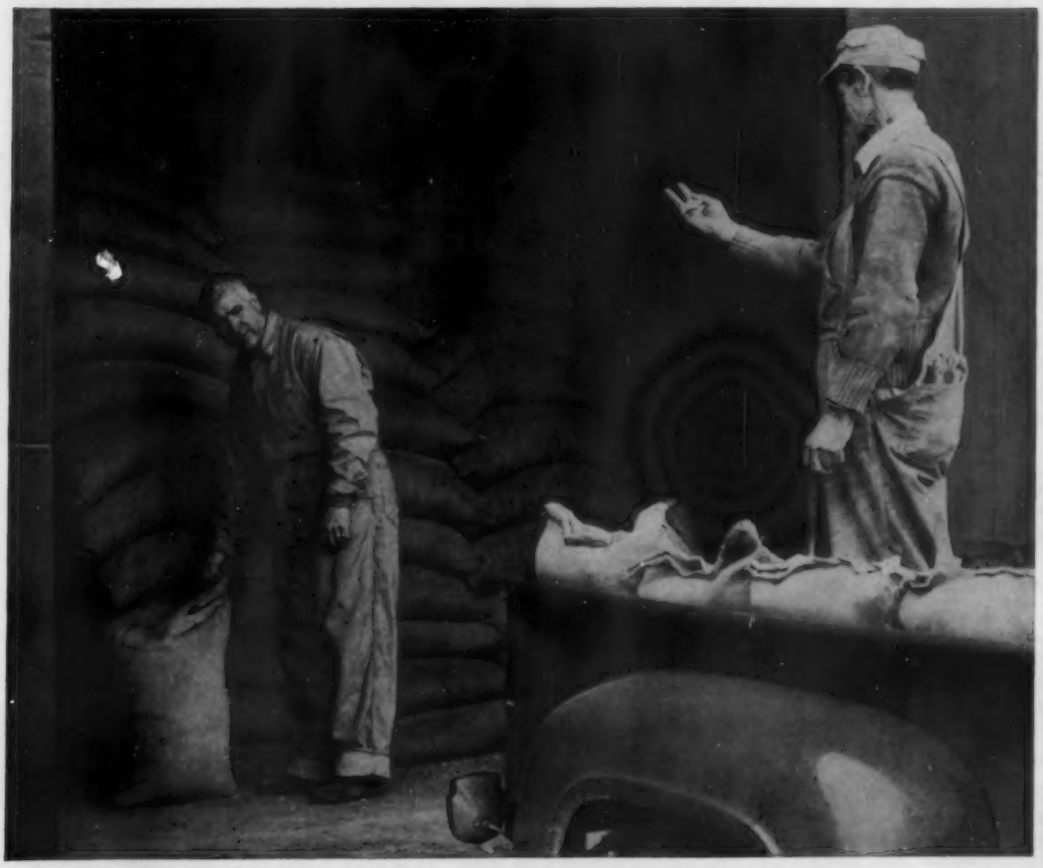

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The proof of quality is in the results. And Kent has proved itself beyond doubt in show rings throughout the Midwest. In 1959, as in the past, Kent-fed cattle walked away with the majority of top honors, including Grand Champion Steer and Grand Champion Carcass at the International. And these show winners were fed the same Kent Feeds you'll be selling to your customers.

Advertising and promotion

Each year Kent Feeds carries on an extensive regional and local advertising program, promoting Kent Feeds and Kent-fed show winners. This program is designed to help you sell more Kent Feeds by stressing the proven quality and results your customers can get in Kent Feeds.

Service to you and your customer

Kent is continually looking for ways to help both dealer and feeder. Kent works with dealers in helping solve feeder problems. Kent feed specialists are on call to help customers and dealers whenever and wherever needed. These Kent experts also attend the local, county, state and national shows, giving help and advice to 4-H and FFA show feeders.

More sales for Kent dealers

A quality feed, backed by Kent's promotion and advertising, plus the extra services available to Kent dealers and customers, means just one thing—more profit for Kent dealers. If you're interested in making more money from your feed sales operation, write today to:

KENT FEEDS

"THE FEED WITHOUT A FILLER"

Muscatine, Iowa • Sioux City, Iowa

MEETING

(Continued from page 32)

mediate. On diets containing 22 and 26% protein, growth rate was improved by increasing the caloric level of the diet from 700 Calories per pound to 1,000 Calories per pound. However, growth rate declined when the caloric level increased to 1,300 Calories per pound. The diets containing 18% protein showed a decline in growth rate when the caloric level was increased from 700 Calories per pound.

Fat content of the carcasses increased as the caloric level of the diet increased, being most pronounced when the caloric level was increased from 700 to 1,000 Calories per pound. As would be expected, as the fat content of the carcass increased the moisture content decreased. Fat content of the carcass was not affected appreciably by protein level of the diet. Protein content of the carcasses was slightly higher on diets containing 22% protein than on diets containing either 18 or 26% protein. Carcass protein declined slightly as the caloric level of the diet increased. There was no consistent difference in ash content of the carcasses due to ration. There was, however, a consistent increase in ash content of the carcasses as the birds increased in age.

ANTHELMINTICS — Two papers were presented which pertained to the use of anthelmintics. The first of these was from the poultry department, Virginia Agricultural Experiment Station, Blacksburg, Va., and was concerned with the effect of piperazine citrate on egg production and egg yolk quality.

A common practice among Virginia poultrymen is to treat layers monthly with piperazine citrate followed by an antibiotic feed for the control of worms (Ascaradia galli).

An experiment was conducted to determine the influence of this procedure on yolk quality and egg production. Eighty birds, 58 weeks of age, from a commercial egg production strain were randomized into five groups of 16 birds each. Groups were treated as follows:

1. Control.
2. .5 oz. of 34% piperazine citrate per 6 pints of water.
3. .5 oz. of 34% piperazine citrate per 6 pints of water plus medicated[1] mash fed for 3 succeeding days.
4. 1.5 oz. of 34% piperazine citrate per 6 pints of water plus medicated[1] mash fed for 8 succeeding days.
5. 1.5 oz. of 34% piperazine citrate per 6 pints of water.

All treatments were repeated at 28-day intervals for five periods.

Eggs were broken out weekly and bi-weekly and given subjective scores ranging from 1-4 for the degree of yolk mottling. All scoring was done by the same individual with the higher scores indicating more mottling. Egg yolks receiving a score of 1 showed no mottling. Also recorded was the incidence of brownish discoloration of egg yolks.

Results obtained from this study indicate no significant difference among treatments for egg production and yolk mottling. The occurrence of the brownish darkening of the yolk was found to be significantly higher in both groups receiving the lower level of piperazine. This condition was also found to be significantly higher in eggs stored at 55° F. and 70% humidity for two weeks than in those held under the same conditions for one week.

This yolk condition would indicate the undesirability of the frequent continuous use of piperazine in laying birds unless worm infestation definitely warranted it.

It has repeatedly been emphasized by parasitologists that it is not wise to worm chickens or turkeys unless worms are present in sufficient number to warrant same. Dr. R. D. Turk, head, department of parasitology, Veterinary School, Texas A&M College, has repeatedly told the writer that the indiscriminate use of anthelmintics is not a sound practice to follow. Chickens and turkeys should be wormed only when there is a worm infestation.

The second paper was concerned with the anthelmintics value of hygromycin B in broiler rations and was presented by Dr. E. J. Day, Mississippi State University.

The effect of continuously feeding hygromycin B, alone and in combination with certain other drugs, on the control of internal parasites and performance of the birds was studied in two broiler trials and one trial with White Leghorn pullets.

Hygromix[2], a crude concentrate premixed to contain 2 and 4 gm. of hygromycin A and hygromycin B activity, was used at two different levels in the first trial with broilers to furnish 4-8 gm. of hygromycin B per ton of feed, in the presence and absence of 3-nitro-4-hydroxyphenylarsonic acid. Large roundworm infestation was reduced to a very low level in all instances; however, none of the differences were statistically significant. Growth rate was significantly improved in every instance except with the highest level of Hygromix (.1%) in the absence of 3-nitro-4-hydroxyphenylarsonic acid. Likewise, feed utilization was improved in all instances, except in the group of birds receiving the ration supplemented with the high level of Hygromix.

In the second test, roundworm infestation of broilers receiving a vitamin A deficient ration (about 800 I.U./lb. furnished by yellow corn) was almost five times greater than that of birds receiving the same ration supplement with synthetic vita-

[1]Medicated mash (active drugs contained), oxytetracycline—.1 gm./lb.; 3 - nitro - 4 - hydroxyphenylarsonic acid—.005%; furazolidone—.005%.

[2]S. hygroscopicus fermentation products, Lilly.

At your service . . .

Tall Paul Anderson is advertising sales manager of Farm Store Merchandising. He also represents other Miller publications in the Upper Midwest. Experience with a national hardware dealer magazine gives him a keen insight to the best ways of marketing through farm supply outlets.

When you want information fast, call Paul at Franklin 4-5200 or drop him a note at 2501 Wayzata Blvd. in Minneapolis.

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RANDOM SAMPLE TESTS ENDING IN 1959

55¢ MORE INCOME PER BIRD

Average income advantage (over feed and chick cost) against 9 next largest-selling layers

Your first reason for choosing one brand of layer over another is extra income over feed and chick cost. Check the chart at right. Hy-Line 934 Series layers averaged 55¢ more income over feed and chick cost than the 9 next largest-selling birds . . . based on 21 official Random Sample Tests ending during the past two years.

Higher price per case: Part of the reason for the 55¢ extra income from Hy-Line layers is that they laid good-quality eggs . . . a high percentage of large and extra-large eggs with smooth, pure white shells and good interior quality. The official test figures show that eggs from Hy-Line 934 Series birds actually averaged 31¢ more per case than eggs from the 9 next largest-selling layers. Not only did they produce higher-value eggs, Hy-Line 934 Series layers also averaged 16.8 more eggs per bird.

The chart tells only part of the story, because the Hy-Line 934 Series birds available this year have an even higher performance potential than those that won 6 of 12 Random Sample Tests ending in 1959. It's another good reason why your feed customers with Hy-Line 934 Series layers will stand a better chance of making bigger profits.

Average income advantage per bird (over feed and chick cost) for Hy-Line 934 Series layers over each of the 9 next largest-selling layers

(computed from 21 Random Sample Tests ending in 1958 and 1959).

$ .29	more income than Brand B
.27	more income than Brand C
.66	more income than Brand D
.44	more income than Brand E
1.14	more income than Brand F
.69	more income than Brand G
.51	more income than Brand H
.40	more income than Brand I
.56	more income than Brand J

55¢ more income than the average of the 9 next largest-selling layers.

Hy-Line® PRECISION GENETICS

Hy-Line Precision Genetics uses inbreeding, hybridizing, and poultry blood-typing to develop Hy-Line layers that are outstanding for production, livability, feed efficiency, and large, good-quality eggs.

Hy-Line® CHICKS

HY-LINE POULTRY FARMS,

A department of Pioneer Hi-Bred Corn Co., Des Moines, Iowa

Hy-Line is a registered trademark of Pioneer Hi-Bred Corn Co. © 1960

more
advertisers use
FEEDSTUFFS
than any other
publication in
the feed industry

min A palmitate (2400 I.U./lb.). The addition of hygromycin B (8 gm./ton) to the low vitamin A ration resulted in an improvement in feed utilization and reduced the worm load to a very low level in two of three instances, but growth rate was not consistently improved. Supplementation of the ration containing adequate vitamin A with hygromycin B (8 gm./ton) resulted in almost complete suppression of roundworm infestation but did not consistently improve growth rate and feed utilization in the presence and absence of tylosin (4 gm./ton), as compared to their respective control groups. The additives, procaine penicillin, zinc bacitracin and tylosin, added singly at the 4 gm. per ton level, all improved growth similarly; however, the differences were not significant. No cecal worms were detected at the termination of either broiler trial.

The addition of hygromycin B (8 gm./ton) to the ration fed to White Leghorn pullets from 9-22 weeks of age resulted in almost complete control of cecal worms and large roundworm infestation was reduced about 50 percent. Growth rate and feed utilization were improved, in most instances, with the use of hygromycin B.

It is extremely interesting to note a relationship between worm infestation and the amount of vitamin A added to the feed formula. The writer is a strong advocate of liberal stabilized vitamin A supplementation. It is certainly of interest to the feed manufacturer to note that the addition of 2400 I.U. of vitamin A per pound decreased worm infestation in broilers.

During the presentation of the above mentioned paper, it also was pointed out that the continuous use of built up litter depressed growth.

California Gets Grants For Studying Diseases

BERKELEY, CAL.—Nutrition and diseases in animals and poultry will be the subject of several research projects of the division of agricultural sciences of the University of California as the result of several grants by various branches of the federal government.

The U.S. Department of Agriculture has given about $60,000 to promote six different studies as follows: $20,000 for research on mucosal respiratory disease complex in cattle; $11,460 for research on vesicular exanthema in swine; $10,000 for research on ornithosis in poultry; $9,200 for research on beef cattle improvements through breeding methods; $6,500 for research on roundworm parasites in cattle, and $4,500 for research on bloat in ruminants.

In addition, the U.S. Public Health Service has given $11,300 for research on the nature and differentiation of the vesicular exanthema virus in swine.

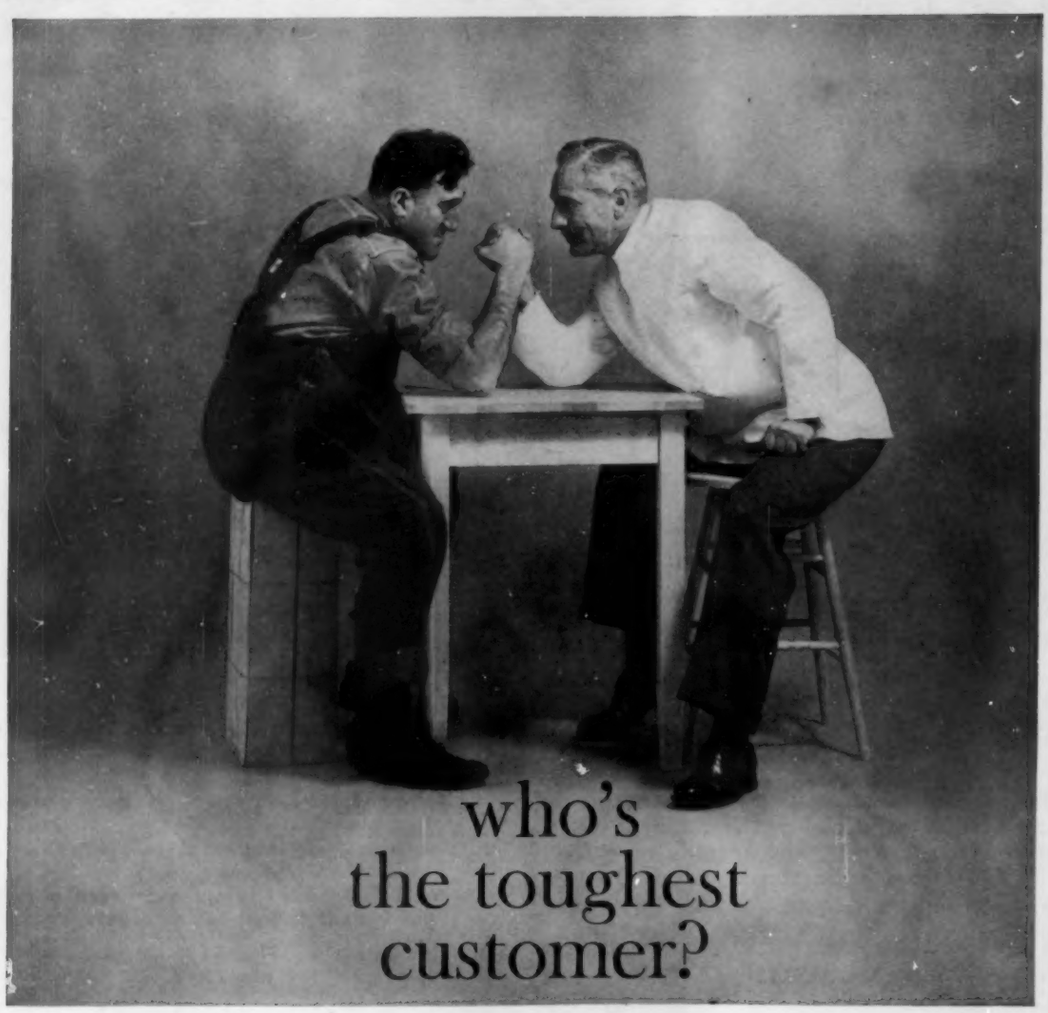
A grant of $10,000 was made by the Stanford Research Institute of Stanford University for basic research in agronomy, animal husbandry, soils and plant nutrition.

The National Science Foundation also has made two gifts totaling more than $32,000—$17,400 for research on amino acid utilization by chick embryos and $15,300 for research on the physiology of the avian oviduct.

New Dealers Listed

FAIRBURY, ILL.—The following dealers have announced they will handle the complete line of products manufactured by Honeggers' & Co., Inc., including livestock and poultry feeds, layers and farm buildings and equipment:

Eugene's Feed Service, Toulon, Ill.; Sigel (Illinois) Elevator Co., Inc.; Bauer Produce, Auburn, Ill.; Hoskins Feed & Supply, Richland, Iowa; Clinton (Missouri) Feed & Supply; Bryner Feed Store, Broken Bow, Neb.; North Central Grain, Johnstown, Neb.; Cochran's Hatchery, Lewisburg, Tenn.; Jordan & McKinnen Mobile Milling Service, Henderson, Tenn., and Jack Drury Feed Co., Richland Center, Wis.

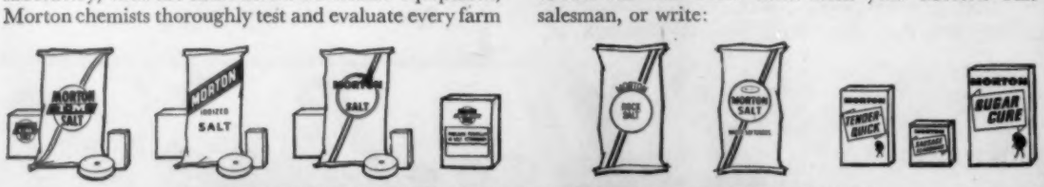


When it comes to Morton agricultural products, the man in the white coat wins hands down. For he's one of the chemists in the Nutritional Research Department at Morton's ultra-modern research laboratory. Before any Morton agricultural product can be put on the market it must pass the rigid standards of quality set up by the Morton chemists, and they are the toughest!

Working in the world's most complete salt research laboratory, with the most modern scientific equipment, Morton chemists thoroughly test and evaluate every farm and ranch product carrying the famous Morton name.

Every product must meet strict quality specifications. It must never vary in content analysis. It must give maximum performance at all times. And it must be the best possible product made at a given fair price.

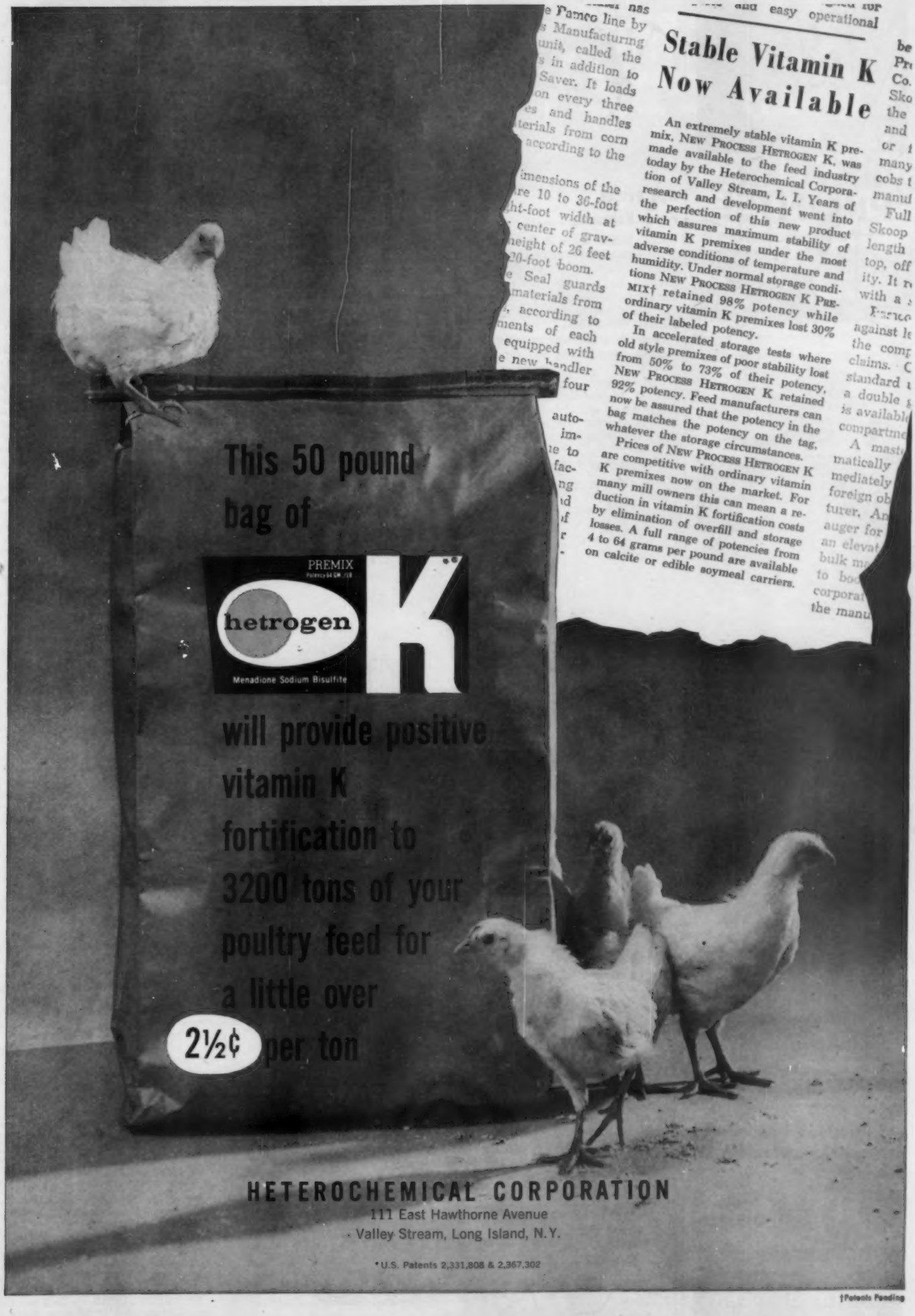
This is why you can sell Morton Salt products with complete confidence. They also are profitable items with strong consumer acceptance that helps make them easy to sell. You can order them from your Morton Salt salesman, or write:



MORTON SALT COMPANY
NUTRITIONAL RESEARCH DEPARTMENT
110 No. Wacker Drive, Chicago 6, Illinois

REMEMBER
TO ORDER
CHASE BAGS
There's None Better!

Use FEEDSTUFFS Want Ads for RESULTS


This 50 pound bag of
PREMIX
hetrogen K
Menadione Sodium Bisulfite
will provide positive vitamin K fortification to 3200 tons of your poultry feed for a little over 2½¢ per ton
HETEROCHEMICAL CORPORATION
111 East Hawthorne Avenue
Valley Stream, Long Island, N.Y.
*U.S. Patents 2,331,808 & 2,367,302
†Patents Pending

Stable Vitamin K Now Available

An extremely stable vitamin K premix, NEW PROCESS HETROGEN K, was made available to the feed industry today by the Heterochemical Corporation of Valley Stream, L. I. Years of research and development went into the perfection of this new product which assures maximum stability of vitamin K premixes under the most adverse conditions of temperature and humidity. Under normal storage conditions NEW PROCESS HETROGEN K PREMIX† retained 98% potency while ordinary vitamin K premixes lost 30% of their labeled potency.

In accelerated storage tests where old style premixes of poor stability lost from 50% to 73% of their potency, NEW PROCESS HETROGEN K retained 92% potency. Feed manufacturers can now be assured that the potency in the bag matches the potency on the tag, whatever the storage circumstances.

Prices of NEW PROCESS HETROGEN K are competitive with ordinary vitamin K premixes now on the market. For many mill owners this can mean a reduction in vitamin K fortification costs by elimination of overfill and storage losses. A full range of potencies from 4 to 64 grams per pound are available on calcite or edible soymeal carriers.

TAKE THE B&L ROAD TO BIGGER PROFITS!

Your Town

THE B&L MOBILE FEED MILL

HIGHLY MANEUVERABLE

Extend your trading area by putting your business on wheels! B&L's big, rugged truck is well balanced for easy positioning in feedlot or barnyard. Saves minutes in set-up and processing time.

MAXIMUM EFFICIENCY

Variable speed on hammermill makes it possible to give customers the type of "granulation control" they prefer. Dual mixing system meets most exacting requirements.

EXCLUSIVE MIX-A-METER

Exclusive calibrated indicator measures feed ingredients, helps operator do his job more quickly and accurately.

BALED HAY FEEDER

Exclusive baled feed table handles whole square or round bales. Another time and labor saver.

ONE-MAN OPERATION

ONE POWER UNIT

GAS or DIESEL*

*Optional equipment includes corn sheller and air unloader.

Write for complete details today!

BARNARD & LEAS Manufacturing Company INC.

1219 Twelfth Street S.W., Cedar Rapids, Iowa

UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Egg Prices From February

Egg prices made a rather poor showing this past year as anyone connected with the egg business knows all too well. Many producers are inquiring as to the course that prices are likely to follow the next six months. Feed men, too, are concerned. A profitable operation for farmers smooths the way for all to benefit.

Unfortunately, no one has yet discovered a method of forecasting prices which will always turn out to give a correct answer. However, there are forces in market situations which point prices in a direction of market equilibrium. It is wise to take these into account in making plans for your flock replacements for the coming year.

Direction of price changes since 1947 from February is indicated in Exhibit 1. This exhibit has been prepared to show you the percent of times prices have gone up, stayed the same, or gone down from February to the following April, to June and to August.

Here is how to read Exhibit 1: The top part of the bar indicates the per cent of times the average Kansas farm price of eggs went up from February to April since 1947. Within this bar is a 69. This means that 69% of the years from 1947, egg prices advanced from mid-February to mid-April.

The middle part of the bar, where there is one, indicates the percentage of years prices remained the same from February to the months as indicated. The bottom part of the bar shows the percentage of the years prices went down from February.

You will notice that egg prices have gone up from February to April about two years out of three since 1947. The reverse situation has prevailed over the same years from February to June as you can see from the second bar in Exhibit 1.

What are egg prices likely to do this year? K-State economists recently predicted poultry prices through June. This is shown along with a record of egg prices since January, 1959, in Exhibit 2. Wholesale prices at Kansas City were predicted. You will notice the last part of the line in Exhibit 2 has a dotted band around the line which indicates the possible range in prices.

Generally, these experts are expecting prices of eggs to be 2@3¢ doz. higher during the remaining first half of 1960 as compared with prices a year ago. As the saying goes, when prices hit bottom there isn't much they can do except go up. Last year at this time we thought the bottom was higher than it turned out to be!

EXHIBIT 1. Eggs: Percent Change in Kansas Farm Price, 1947-59

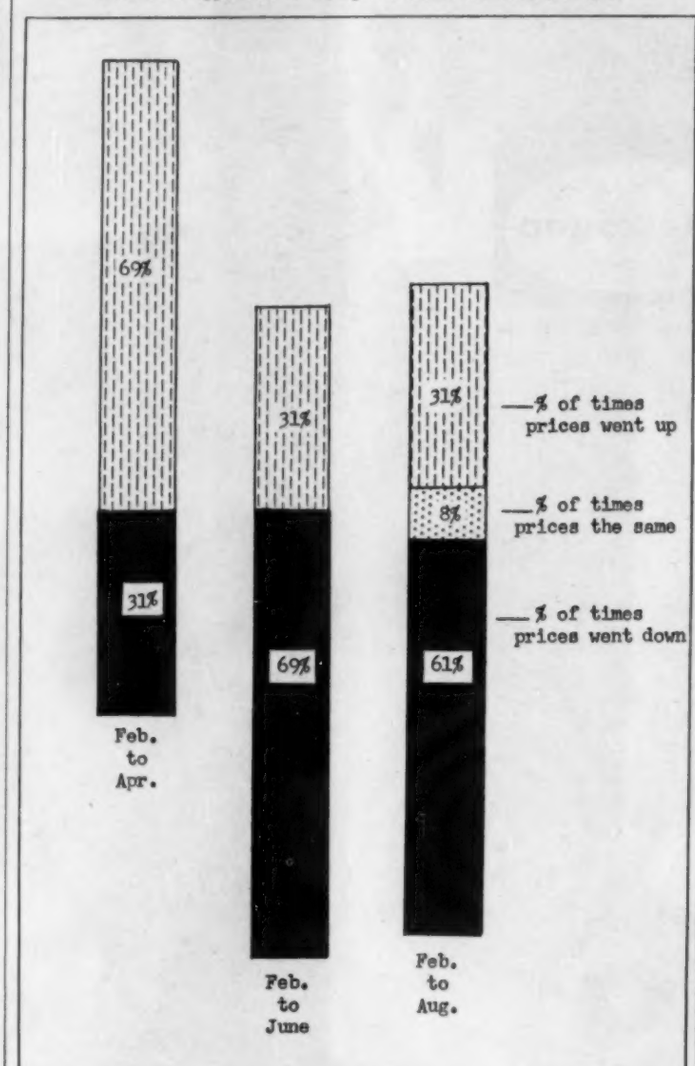
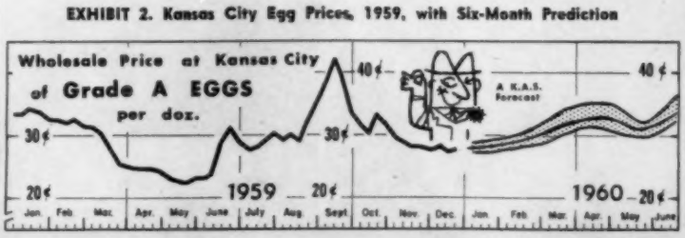


EXHIBIT 2. Kansas City Egg Prices, 1959, with Six-Month Prediction


Wholesale Price at Kansas City of Grade A EGGS per doz.
40¢
30¢
20¢
A K.A.S. Forecast
1959
1960
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June

Tomorrow's Poultry Housing Needs Noted

BIRMINGHAM, ALA.—Comfortable, economical, durable and convenient were terms used by a poultry specialist to describe requirements for the chicken house of tomorrow.

Speaking before the southeast section of the American Society of Agricultural Engineers, Dr. J. Clyde Driggers, poultry division, University of Georgia, said tomorrow's house must provide a reasonably comfortable environment for the bird so high performance and efficiency can be maintained. This means protection against extremes in temperature, adequate ventilation, relative dryness, ample space, high sanitation and adequate light, he said.

"Using current costs, the laying house including land and equipment should not exceed $2.50 per bird," Dr. Driggers emphasized. "The broiler house, also including land and equipment, should not exceed $1 per bird."

He pointed out that durability is closely associated with economy, but must be considered in the chicken house of tomorrow. "Twenty years is not an excessive life expectancy, which means the house must be able to repeatedly withstand hurricanes, steam cleaning, chemicals, disinfectants, etc.," he said.

Doors, nests, roosts, etc., must be as convenient for the attendant as they are comfortable for the chicken, Dr. Driggers stated.

He said future houses will vary in size and width, but believes most of those in the Southeast will continue to be of pole-type construction—dirt floors and metallic roofs.

"The degree of mechanization will depend upon economic aspects of equipment," he said.

FORMER FEED MAN DIES

WOOSTER, OHIO — DeSilva S. Hummel, 69, died at Wooster Hospital recently. Mr. Hummel, retired, had been sales manager for the Wooster Feed Co.

JOE BROOKS

(Continued from page 24)

recognition has done something to those waitresses. They have spirit; they are very friendly and anxious to serve."

Joe nodded. "I can believe that. And you mean—"

"I mean that we ought to give our employees the same type of recognition, to make them more satisfied with their job and pay, to be more proud to be a part of this organization, and so they will please more customers and make more sales for us and them."

"A noble objective," agreed Joe, "but we can't have every employee hand a card to every customer when he comes for a grind and mix job, telling him who's waiting on him. The farmers would laugh and the employees would feel sheepish. Men are funny about those things."

Mary smiled slightly. "I agree with you that men are funny about a lot of things, dear, but we can accomplish what we want another way. Why not print an ad showing a picture of each employee? Tell how long they have been with the company, what they do, what their hobbies and other interests are and how important they are in helping this mill give better service to customers."

Joe smiled. "Yes, I'll admit that is good."

Then Mary said, "Get some reprints of those ads. Tack some up in the mill department, the office, the farm supply store, etc. Also make some available for the employees so they can send them to their relatives, if they wish."

Once more Joe nodded. "You've certainly thought this through, Mary."

Mary smiled happily because Joe liked her idea. "Then we could have calling cards printed for each employee. This wouldn't be very expensive. We could just change names every 300 or 400 cards. And on the back of that calling card, we could print all the services we offer to farmers and all the products we sell."

Joe blinked. "Say, that is a good idea, Mary. I can see where this would make the employees proud and conscious of their importance to the mill. And they would pass those cards out to farmers, friends, relatives, etc. That would give us more advertising. In fact, such cards would last for a long time. Most people wouldn't throw them away. Thanks for the idea, Mary. I don't mind your going to a steak dinner at a woman's club now and then, if you can come home with an idea like that every time."

Mary looked a little sad. "Oh, Joe, must I always come home with a business idea wherever I go?"

Joe looked a little downcast, too. "Yes, isn't that sort of terrible? But you know, Mary, competition is mighty tough nowadays, and we have to wrack our brains night and day."

Abbott Sales Rise 5.2% for Record

CHICAGO — Abbott Laboratories' 1959 consolidated sales rose 5.2% to a record high $122,602,000, it was reported by George R. Cain, president. Earnings remained approximately the same.

The earnings were $12,989,000, up .9% from 1958 earnings of $12,873,000. They were equivalent, after payment of preferred dividends, to $3.32 a share in 1959, the same as in 1958 when slightly fewer shares were outstanding.

The sales increase from $116,597,000 in 1958 was accounted for largely by the introduction of new products and increases in foreign business, Mr. Cain said.

The company's capital expenditures during 1959 were at an all time high of $10,300,000, representing improvements principally of domestic facilities.

Abbott's research expenditures were $6,900,000 in 1959, a rise of about 20% over 1958. A similar increase is budgeted for 1960, reflecting the forthcoming occupation of the company's new research center addition, Mr. Cain said.

Hoffman

for complete nutritional service

Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI

SALESMEN NEED PROPER TOOLS

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agricon
S. H. MORRISON, Ph.D., D.V.M.
Director

515 Woodlands Drive
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VITAMIN FORTIFY YOUR OWN FEEDS with JERSEE VITAL-MIN

Never fails to produce GUARANTEED POTENCY results!

Contains necessary Vitamins, Antibiotics, Amino Acids and Trace Minerals to Vitamin Fortify your feeds for only a few cents a bag.

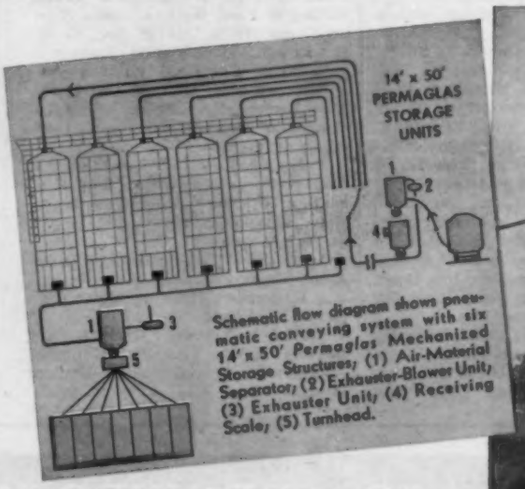
VITAL-MIN for Poultry
MIN-O-LAS for Cattle
LAS-O-MIN for Hogs

CAF-SUPP
A dependable body building feed containing guaranteed levels of Vitamins A-D and Aureomycin. Simple and economical to feed. Assures guaranteed feeding results.

PRE-CAF-SUPP
A COMPLETE MILK REPLACER WITH SWEET MILK SOLIDS — fortified with Aureomycin to help prevent scours and minor digestive disturbances. Packaged in 25 and 50-lb. bags.

WRITE FOR DEALERS' SALES HELPS! Established 1920

THE JERSEE CO. MINNEAPOLIS, MINNESOTA



Schematic flow diagram shows pneumatic conveying system with six 14' x 50' *Permaglas* Mechanized Storage Structures; (1) Air-Material Separator; (2) Exhauster-Blower Unit; (3) Exhauster Unit; (4) Receiving Scale; (5) Turnhead.

Here's why formula food manufacturer converted to automatic, bulk storage...

Permaglas®

Storage Units boost mill capacity 100%

without adding to mixing facilities... one man does work of six in same time... bulk savings climb to $3.00 per ton

F. M. Brown's Sons, Inc., of Birdsboro, Pa., reports substantial savings from their automatic handling and bulk storage system for soybean meal, gluten feed, distillers and brewers grains, bran and middlings with six 14'x 50' *Permaglas* Mechanized Storage Units equipped with A. O. Smith's exclusive mechanical "sweep-arm" bottom unloaders. This leading formula food manufacturer's pneumatic system has been in operation for more than two years.

BULK HANDLING SAVINGS—With *Permaglas* bulk storage the mill more than doubled its 40-ton per day production capacity without installation of additional mixing facilities... one man unloads a car in about the same time which formerly required 4-6 men approximately three hours... the extra manpower is now available for other duties... purchase of bulk feeds results in net savings up to $3.00 per ton. In addition, *Permaglas* units eliminated discharge problems inherent with conventional silos in handling bran, middlings and soft feed ingredients. And bulk handling efficiency eliminated smaller mixing operations at three other mills which are now used for distribution of finished products.

PUSH BUTTON CONVEYING SYSTEM — Bulk feed ingredients are discharged automatically from cars to each of six *Permaglas* Storage Units into the pneumatic system by means of mechanical "sweep-arm" bottom unloaders to one of eleven holding bins, and spouted by gravity to a scale into the mixers.

The *Permaglas* Storage Units are glass-fused-to-steel construction* both inside and out... provide utmost sanitation, and easy-to-clean bulk handling systems... safeguard free-flowing bulk materials from contamination... reduce periodic structure maintenance to a minimum.

Why not profit from the many cost-savings advantages of automatic handling systems with *Permaglas* Bulk Storage Structures. Ask A. O. Smith to help solve your materials handling problems. Mail coupon today!

*HYDRASTEEL—Protected by U.S. Patent No. 2,754,222.

Through research ...a better way

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CORPORATION
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A. O. Smith International S.A., Milwaukee 1, Wis.

A. O. SMITH CORPORATION
Permaglas Storage Units, Dept. PS-20
Kankakee, Illinois

Send me free Permaglas Mechanized Storage Unit Bulletin MU-100.

Name.....
Title.....
Company.....
Address.....
City.....Zone....State.....

midwest alfalfa blenders, inc.
The Ranch Mart
95th and Mission Road
Prairie Village 15, Kansas
Mitchell 9-0386 (Kansas City)

GREEN BANNER DEHY
MIDWEST
DEPENDABILITY . . . in Quality and Service

Convention Calendar

March 3—Illinois Swine Day; Uninois, Urbana; K. E. Harshbarger, Dairy Science Dept.

March 3—Illinois State Turkey Growers Assn.; Winter Meeting, University of Illinois, Urbana; sec., S. B. Swann, Kauffman Turkey Farms, Waterman, Ill.

March 3—Illinois Swine Day; University of Illinois, College of Agriculture, Urbana; Harry G. Russell, Livestock Extension Specialist.

March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 9—Mutual Millers & Feed Dealers Assn.; Statler-Hilton Hotel, Buffalo, N.Y.; sec., Mrs. Donald E. Mattison, Box 8, Cattaraugus, N.Y.

March 13-17 — Grain Elevator & Processing Superintendents; Jung Hotel, New Orleans, La.; sec., Dean M. Clark, "Grain" Magazine, 1120 Board of Trade, Chicago 4, Ill.

March 17-18—Oregon Feed & Seed Dealers Assn.; New Sheraton Hotel, Portland, Ore.; mgr., Russ Hays, 702 Lewis Bldg., Portland, Ore.

March 17-18 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Richard D. Creek, University of Maryland, Department of Poultry Husbandry, College Park.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 23-24—National Broiler Industry Conference; Dinkler-Plaza Hotel, Atlanta, Ga.; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 27-29 — Colorado Grain, Milling & Feed Dealers Assn.; Shirley-Savoy Hotel, Denver; sec., O. W. Eriksen, 519 Boston Bldg., Denver 2.

March 29—New Jersey Poultry Nutrition Institute; Rutgers University, New Brunswick, N.J.; R. L. Squibb, chairman, Poultry Science Department.

March 31-April 2—Pacific Dairy & Poultry Assn. Exposition and Convention; Stardust Hotel, Las Vegas, Nev.; association office, 1304 E. 7th St., Los Angeles 21, Cal.

April 1-2 — Texas Grain & Feed Assn., Shamrock Hotel, Houston; sec., Ray B. Bowden, 407 Fort Worth Club Bldg., Ft. Worth, Texas.

April 5-7—Nebraska Grain & Feed Dealers Assn.; Pershing Municipal Auditorium, Lincoln; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

April 24-28—Business Management Program, sponsored by Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

May 23-27 — Southeastern Egg Quality and Grading School; University of Georgia, Athens; sponsored by Southeastern Poultry & Egg Assn., sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

June 17-18 — Delmarva Chicken Festival; Selbyville, Delaware; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown.

June 19-22—The American Dairy Science Assn.; Utah State University, Logan; sec., H. F. Judkins, 32 Ridgeway Circle, White Plains, N.Y.

Aug. 14-18—Business Management Program, sponsored by Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

Oct. 16-20—Business Management Program, sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce De Leon Ave., Decatur.

April 6—Purdue Egg Day; Purdue University, Lafayette, Ind.; David D. Jackson, Extension Poultryman.

April 10—Informal Poultry Nutri-

"Our BROWER MIXER does a top notch job!"
Says Jack E. White, Van Buren, Arkansas

Interior easily reached through large hinged service door and hinged conveyor sleeve.

Mixing paddle at top WHIRLS ingredients for thorough, even mixtures.

Glass observation window at eye level provides easy inspection of feed being mixed.

"We use our Brower Mixer to make our own brand of feeds to sell, for custom mixing, and we also mix feeds for our own livestock. We haven't spent a cent for repairs, and the mixer is very economical to operate. The Brower Mixer does a top-notch job and we can recommend it to anyone as an excellent investment."

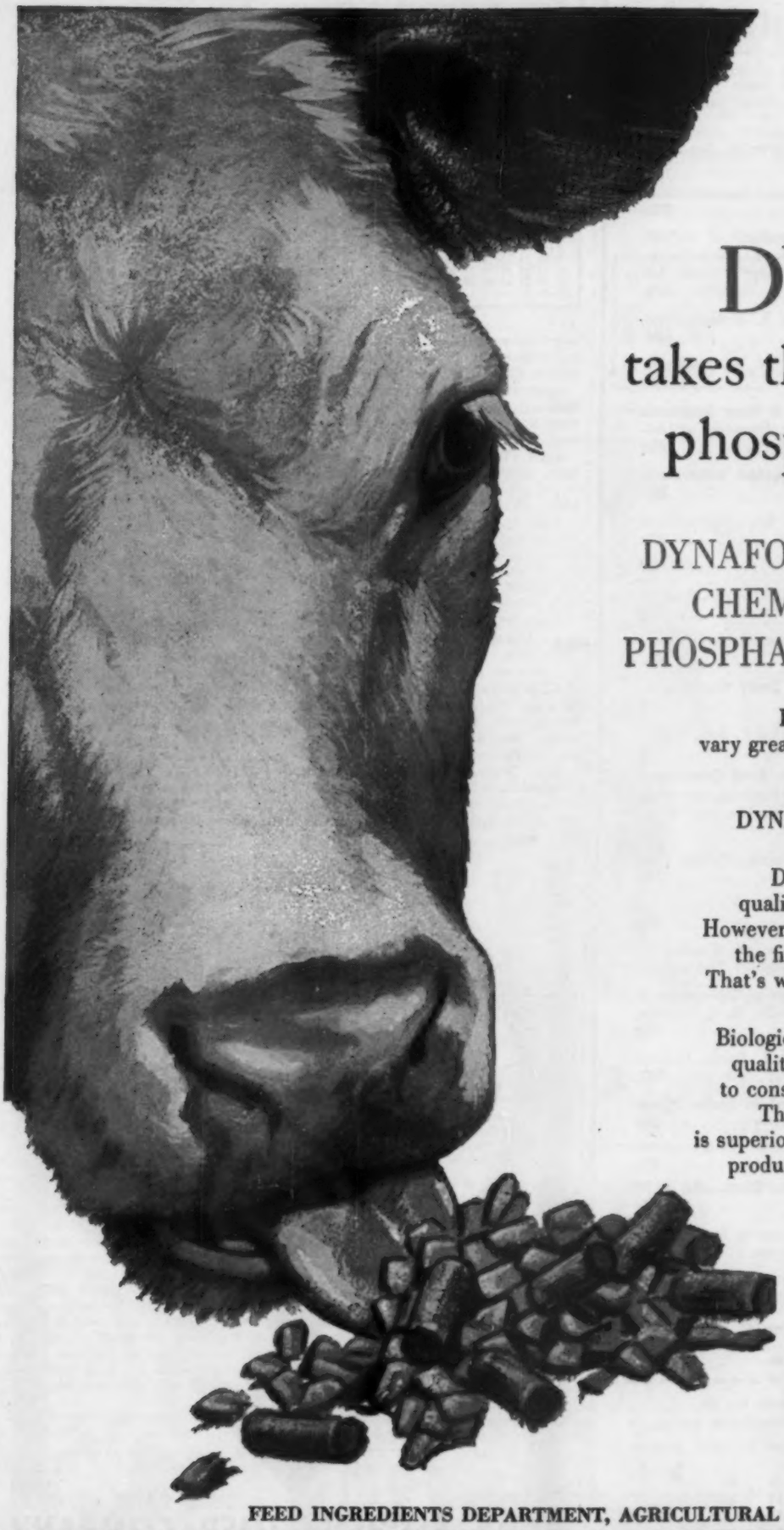
BROWER Whirlwind MIXER

- WHIRLS the ingredients instead of just stirring or tumbling them.
- THOROUGH mixes — best obtainable.
- FAST — produces perfect blends in about 10 minutes.
- ECONOMICAL — power cost only 3¢ to 5¢ a ton.
- FIVE SIZES — 700, 1200, 2000, 3000, and 4000 lbs. per batch capacities; above-floor and below-floor models.
- Heavy welded steel construction — built for years of trouble-free service.

Write FOR FREE CATALOG
402 N. 3rd, Quincy, Ill.

BROWER MANUFACTURING COMPANY

World's Largest Selling Mixer



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takes the waste out of phosphorus feeding

DYNAFOS PROVES THAT ALL CHEMICALLY-PROCESSED PHOSPHATES ARE NOT ALIKE

Even chemically-processed phosphates vary greatly in their availability to the animal. Many fail to measure up to the high standards of International's Dynamic DYNAFOS—the only dicalcium phosphate with *biological control.*

DYNAFOS is chemically produced and quality guarded with 38 separate analyses. However, chemical analyses alone do not give the final answer of true phosphate quality. That's why International maintains biological control on DYNAFOS production.

Biological availability tests assure day-to-day quality, and enable International scientists to constantly improve Dynamic DYNAFOS. The practical result: today's DYNAFOS is superior to unprocessed or poorly processed products. Write or wire your International representative for details on Dynamic DYNAFOS.

Products for Growth*

IMC

*Trademark

34-59

FEED INGREDIENTS DEPARTMENT, AGRICULTURAL CHEMICALS DIVISION

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tion Conference; Chicago, Ill.; Dr. M. L. Sunde, Poultry Department, University of Wisconsin, Madison.

April 11-13—Poultry and Egg National Board, LaSalle Hotel, Chicago, Ill.; mgr., Floyd Geil, 8 S. Michigan Ave., Chicago 13, Ill.

April 17-19—Animal Health Institute; Shoreham Hotel, Washington, D. C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines 9, Iowa.

April 21—New England Dairy Feed Conference; Hotel Lenox, Boston, Mass.; chm., Dr. Stanley N. Gaunt, Dairy and Animal Science Dept., College of Agriculture, University of Massachusetts, Amherst.

April 22—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, Animal Science Dept.

April 21-23—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John Gilmore, Blue Anchor Bldg., 1400 10th St., Sacramento 14, Cal.

April 21-23—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 22 — Nebraska Livestock Feeders Day; University of Nebraska, College of Agriculture, Lincoln; chm., Wm. J. Loeffel, Animal Husbandry Dept., Lincoln 3, Neb.

May 1-4—National Fisheries Institute; Hotel Fontainebleau, Miami Beach, Fla.; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

May 9-11 — American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 9-11 — Association of American Feed Control Officials; Sheraton-Blackstone Hotel, Chicago; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

May 15-16—Missouri Grain & Feed Assn.; Hotel Governor, Jefferson City; sec., D. A. Meinershagen, Higginsville.

May 15-17 — National Cottonseed Products Assn.; Roosevelt Hotel, New Orleans, La.; sec., John F. Moloney, Box 5736, Memphis 4, Tenn.

June 12-14—Eastern Federation of Feed Merchants, Inc.; Whiteface Inn,

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June 14-15 — Alabama Poultry Industry Assn.; Municipal Auditorium (Exhibits) and Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 14-17—NEPPCO Egg Quality School; Rutgers University, New Brunswick, N.J.; Dr. A. Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

June 19-21—Indiana Grain & Feed Dealers Assn.; Mid-Summer Convention; French Lick-Sheraton Hotel, French Lick; sec. Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

June 21-22—Association of Southern Feed & Fertilizer Control Officials; Riverside Hotel, Gatlinburg, Tenn.; sec., Maurice B. Rowe, Department of Agriculture, 1119 State Office Bldg., Richmond 19, Va.

June 23-24—Northeastern Poultry Producers Council Business Management Conference for Egg and Poultry Marketing Cooperatives; Hotel Viking, Newport, Rhode Island; Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

July 23-26 — Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah; sec., Will L. Kinard, Suite 210, 3240 Peachtree Road Bldg., Atlanta 5, Ga.

Aug. 2-5 — Poultry Science Assn.; University of California, Davis; sec., C. B. Ryan, Texas A&M College, College Station.

Sept. 1-6—International Congress on Nutrition; Sheraton-Park Hotel, Washington, D.C.; sponsored by International Union of Nutritional Sciences; sec., Milton O. Lee, 9650 Wisconsin Ave., Washington 14, D.C.

Sept. 14-16—National Feed Ingredients Assn.; Liggetts Holiday Inn, Burlington, Wis.; sec., Paul W. Bone-

Sept. 21-23 — Feed Production Moines, Iowa.

School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 22-23 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Oct. 4-6 — Northeastern Poultry Producers Council; Exposition and Convention; Onondaga County War Memorial Bldg., Syracuse, N.Y.; Doris Endebrock, Exposition Mgr., 10 Rutgers Place, Trenton 8, N.J.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-12—Virginia State Poultry Federation convention and trade show; Hotel Roanoke, Roanoke, Virginia; sec., J. Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 20-21—Cooperative G.L.F. Exchange, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Nov. 2-3—Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, joint convention; Springfield Armory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Harless, Shelbyville, Ill.

Nov. 2-3—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Missouri.

1961

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 13—South Carolina Poultry Festival; Batesburg - Leesville; sec., W. E. Sanders, Batesburg.

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The Nutritional Aspects Of Disease

"Will research in the field of diet-disease relationships lead to a new set of feeding standards?"

By Dr. Robert L. Squibb
Rutgers University
New Brunswick, N.J.

It is generally accepted that adverse environment and disease may become limiting factors in poultry production; so much so that these phenomena can completely offset the gains expected from genetically improved birds and modern balanced rations.

A poultry industry is, of necessity, heavily populated, which is conducive to a high incidence of disease. Regardless of the help derived from modern drugs, antibiotics and vaccines, there remains an overwhelming number of sick animals which must be fed either during the course of successful therapy or following the failure of medication.

Nutritional therapy may consist of feeding large quantities of a single dietary essential or supplying the birds with a "super" concentrate containing increased quantities of a number of vital nutrients. Present justification for these procedures is largely based on the assumption that nutrients essential in specific amounts for healthy animals are also necessary in similar increased quantities for the animal while under the stress of disease. There are a significant number of published reports that indicate the feeding of diseased birds is not this simple. In fact, several of the reports would serve as an excellent basis for the question, "How many dollars are wasted on the nutritional therapy of animals—especially poultry—each year?"

Hill and co-workers at North Carolina State College have reported that high vitamin levels may affect the resistance of birds to fowl typhoid. An increased survival rate was observed when one group of vitamins was fed. Removal of some of the vitamins or feeding the combination at lower levels reduced survival time. While these data indicate a beneficial effect, on the other hand, these workers found by decreasing the protein level of the diet the survival rate of the inoculated chicks was increased. Depending on the disease, single vitamins may exhibit different characteristics.

Cooperman et al., at Wisconsin demonstrated that the addition of thiamine to a diet low in this essential both aided and prevented the appearance of paralysis in chicks infected with avian encephalomyelitis. The degree of protection afforded against this virus depended on the age of the chick, previous state of nutrition and state of nutrition at time of inoculation.

Complete Inhibition

A complete inhibition of Rous chicken sarcoma in baby chicks was observed by Little and co-workers at Lederle Laboratories upon feeding a folic-acid-free diet or by treating the birds with folic acid antagonists.

The writer, in an attempt to diagnose the nutritional status of diseased White Leghorn and New Hampshire chickens by blood analyses (Poultry Science, 1956), found coryza infection significantly reduced serum ascorbic acid, total carotenoids and vitamin A while causing an elevation of serum total proteins. Cholera infection elevated serum protein and ascorbic acid while depressing total carotenoids, vitamin A and serum amylase. In Newcastle disease, total serum proteins, vitamin A and carotenoids were significantly reduced while ascorbic acid levels were elevated. Based on these studies, ascorbic acid and vitamin A were given singly and in combination as therapy to birds infected with Coryza with no apparent results other than a measured increase in serum levels of these vitamins (unpublished data).

These examples may serve to illus-

EDITOR'S NOTE: The accompanying article on the nutritional aspects of disease served as the basis of a talk Dr. Robert L. Squibb gave at the recent Rutgers Poultry Disease Institute. Dr. Squibb is a professor in the poultry science department at Rutgers University.

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ILLINOIS MEETING SPEAKERS—These three men all appeared on the program of the University of Illinois Feed and Nutrition Conference Feb. 4-5 at Urbana. All members of the University of Illinois staff, they are (left to right): Dr. B. L. Larson, dairy biochemist; Dr. A. L. Neumann, head of the beef cattle division, and Dr. G. W. Salisbury, head of the department of dairy science.

trate the need for further understanding of the fundamentals involved in the relationship of diet to disease. The fact that adequate protein levels, folic acid and thiamine may be synergistic in normal healthy animals and antagonistic during disease involvement raises the question as to the advisability of using "super" supplemented rations or massive doses of single dietary essentials indiscriminately. Antagonism may result from the invading organism benefiting at the expense of the host. Again, such therapy may disturb certain physiological balances. Whenever a disease involves a tissue, a chemical reaction results and a new and different environment is created. Such may or may not trigger a mobilization of body processes. The general progress of a disease would depend upon the balances established and the resistance provided through immune bodies. These are but a few of the many possibilities. One should not overlook the fact that in some cases beneficial supplementation of excessive quantities of essentials could be only chemotherapeutic in action. Hence, an inexpensive drug would give the same results.

Work in progress at this station on diet and disease interrelationships in poultry has demonstrated clearly the need for adequate isolation facilities, improved laboratory instrumentation and the necessity for cooperation among a number of different scientific disciplines.

From a practical standpoint, the question no doubt will be raised: "Will research in the field of diet-disease relationships lead to a new set of feeding standards?" Regardless of whether this is possible or not, for the present, it is imperative that poultrymen understand that data obtained for one specific disease cannot be extrapolated to include all or even related diseases. The present standards for normal healthy animals have taken years to develop and are still in process of revision. It would be safe to conclude that a concentrated effort on the evaluation of the nutritional aspects of disease is long overdue. This can be an area where significant gains may be made to aid the farmer, if not in accomplishing successful therapy, then in preventing him from throwing away his money on needless or even detrimental supplementation.

Changes in Swift Oil Mill Unit Announced

CHICAGO—A series of managerial changes has been announced by Scott E. Cramer, head of Swift & Co.'s oil mill department.

H. B. Parker, who has been manager of Swift's soybean mill in Frankfort, Ind., will move to Chicago to assist Mr. Cramer in the oil mill department.

E. C. McGee, manager of Swift's oil mill at Memphis, Tenn., since 1951, has been named the new manager of the Frankfort soybean mill.

W. W. Moore has been appointed manager of the Memphis Oil Mill. He has served in a similar capacity at Houston, Tex., since 1953.

Mr. Parker was in the oil mill department at Chicago for about three years just prior to going to Frankfort as manager in 1952.

Mr. McGee has served in several refinery and oil mill positions in Atlanta, Newark, N.J. and Chicago, and is a former manager of the soybean Mill at Des Moines, Iowa.

Mr. Moore went to Frankfort, Ind., from Chicago in 1949 as soybean mill sales manager. He was at Frankfort until his transfer to Houston, in 1952, where he became manager the following year.

North Dakota Mill to Be First of GTA 'Satellites'

MINNEAPOLIS — The 20-ton-an-hour feed mill to be built at Edgeley, N.D., by Farmers Union Grain Terminal Assn. (Feedstuffs, Feb. 13) will be the first of a number of interior regional feed mills serving the Upper Midwest, according to A. H. Roffers, manager, GTA feed division.

These mills, it was explained, will be tied in with over-all GTA cooperative grain marketing operations. They will supplement the million-dollar feed plant now being built at Ellis, S.D. In addition to supplying feed over a four-state area, the Ellis plant is to be able to furnish feed concentrates and premixes to the regional "satellite" mills like that planned for Edgeley, Mr. Roffers said.

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CONFERENCE

(Continued from page 16)

Co., San Francisco, in his discussion of the design, installation, operation and maintenance of a pelleting system.

He said the hole in the die will vary by the amount of entry taper, angle of taper, depth of taper, thickness of the pelleting hole, angle and depth of relief taper. "Be sure the die you are using is suited to the material you are pelleting," he cautioned.

Mr. Alessio commented that he "always leans toward a die which will produce a pellet on the soft side" when setting up die specifications on a new material. "A man will quickly decide that a pellet is too soft to suit his requirements and request a thicker die," he said. "On the other hand, very, very seldom will a man complain that the pellet he is producing is too hard.

"It is often difficult to detect a great deal of difference in appearance between the pellet made on exactly the right die and one which is considerably too thick. Often, the only indication that the pellet is being made excessively hard is the reduced production rate."

RELATIONSHIP OF THE VETERINARIAN TO THE FEED INDUSTRY—To arrive at an answer to problems which may exist in the relationships between veterinarians and feed men, "it is essential," according to Dr. Owen Thompson, veterinarian, Dr. Salsbury's Laboratories, Charles City, Iowa, "that the veterinarian and the feed man go more than half way in getting acquainted with each other."

Dr. Thompson added, "Both should realize and admit that neither knows all the answers to the problems in their respective fields. If they pool their knowledge and experience they will come closer to solving problems that arise."

The activities of the two fields of endeavor must be adjusted accordingly, he said. "We certainly recognize the veterinarian as a technically trained individual; also many persons in the feed industry have highly technical training. How much better it would be to correlate the activities of these two technically trained individuals, so that each in his own right could contribute to the common cause, rather than oppose each other. Many feed companies and integrated operations are recognizing this fact and as a result are employing both nutritionists and veterinarians to direct these phases of company activities."

Dr. Thompson believes there is a place, and a definite need, for veterinarians in all facets of activity, including private practice, institutional work, commercial activities, industrial firms, federal or military organizations. "In each of these activities there is opportunity for veterinarians to utilize their technical training for the benefit of the animal industries and themselves."

In Dr. Thompson's opinion, as more feed companies, primarily the larger ones, employ veterinarians, more of the drugs sold to farmers will be used under veterinary supervision. "This is good for the farmer and the feed company," he said, "but does not solve the problem of the practicing veterinarian."

He warned that "we cannot use medicated products blindly or we may do more harm than good. Veterinarians working with feed companies can play an important part in this case."

Dr. Thompson said the practicing veterinarian "can fill a very important gap" for feed companies having no veterinarians in their employ. "If proper friendships have been cultivated, an exchange of ideas and information can be valuable," he said.

"If veterinarians are familiar with the feed formulations and feeding programs of the local feed mills, they will be more inclined to use them to good advantage and less inclined to sell feed ingredients or feeds of their own formulation."

L. E. Thompson Joins Reid-Strutt

PORTLAND, ORE. — Reid-Strutt, Inc., Portland, has announced the appointment of L. E. (Tommy) Thompson as manager of the firm's industrial division.

The company handles processing and milling equipment and provides mill design and engineering services. The industrial division includes activities in flour milling and a company-manufactured system for pneumatic conveying.

Mr. Thompson formerly was a western representative for Sprout, Waldron & Co., Inc., having been with that firm since 1951.

HUSTLER

NEW!! SINGLE SECTION SIFTERS

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Used profitably by many mills as a scalper, dry mash finisher, grain cleaner and feed dresser. Has big capacity but uses little power. Sturdy, compact, made with finest sifter craftsmanship. Uses standard type sieves for easy, quick change of flow.

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N NOR-VELL INC.
FORT SCOTT, KANSAS
The Name That Means Better Sifting

Pignectar puts nursing palatability in pig pre-starter and starter rations

Sow milk flavor with "sweet tooth" balance helps solve the old problem... get feed into baby pigs early

Nutritionists agree that the period from birth to 25 pounds is the most critical stage in a pig's life. Nutritionally his needs are both exacting and great. He needs to eat an abundance of dry feed during this time for best performance.

Research results from Iowa State University reveal that the flavor and odor components of sow milk incorporated into dry baby pig rations along with the proper "sweet tooth" balance greatly improve palatability.

Pignectar (sow milk flavor) provides the taste baby pigs love . . . helps hog producers dry nurse pigs off the sow . . . puts the important palatability factor in pre-starter and starter rations economically.

As little as 1 pound per ton formulated into pig pre-starter and starter rations is the first step to a sound TASTE-STAGE feeding plan. The next step is to use ½ pound of Sucro Flavor (swine sweet feed flavor) per ton in grower rations and ¼ pound per ton of fattener-finisher feeds.

We know nutritional requirements of pigs change with age. Now we know that taste requirements change as well . . . a key to controlled palatability in complete feeding programs.

Pignectar and Sucro Flavor are *your only research proven* swine feed flavors. You may wish to reconfirm results on your test farms. Place your order now. We are filling quantity shipments of our Pignectar immediately. Farmers are already learning of the benefits of Pignectar and TASTE-STAGE feeding through the pages of National Hog Farmer, Breeder's Gazette, etc.

Take advantage of our introductory offer.

FREE $110 retail Short-Wave Transistor Radio

to first 100 Customers ordering 50 lbs. Pignectar and 50 lbs. Sucro Flavor

We are convinced that swine TASTE-STAGE feeding will be profitable to you. In appreciation of your cooperation in trying our program to convince yourself ... we want you to have this short-wave Transistor Radio. Listen to the markets, listen to the news, listen to all corners of the world ... but above all, listen to what the pigs tell you about palatability when Pignectar and Sucro Flavor are used in your swine feeds.

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☐ Send 50-lb. trial order of PIGNECTAR @ $2 per lb., and 50 lbs. Sucro Flavor @ $2.50 per lb. Trial orders are credited towards future quantity discount shipments. (Also send FREE short-wave transistor radio. My money will be refunded if I am not satisfied, and I will keep the radio.) ***Sorry, but only 1 radio to the first 100 customers!***

☐ Rush FREE sample of PIGNECTAR with complete research data and price schedules.

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Producing Beef Cattle To Specification Cited As Growing Nationally

SAN FRANCISCO — The prediction that specific production of beef cattle will spread nationally and, thus, affect practices throughout the U.S. was made by D. M. Peckham, department of store operations, Safeway Stores, Inc., at the 28th annual convention of the Pacific Coast Renderers Assn. held here in the Fairmont Hotel Feb. 12-13.

He said animal feeding habits may be changed in the future, and commented that rising consumer preference for leaner meats "will affect the weights to which beef cattle and hogs are fed."

At present, he said, "feeders tend to convert low priced corn into meat and thereby over-finish cattle." An exception to this general practice, he noted, exists on the west coast where "feeders are feeding to produce a specification product. This means that they start with cattle bred for meat quality, and then feed to obtain the type of product wanted by the consumer."

How to Improve Services

The problem of how to improve industry services to the feed manufacturer was faced by renderers from several western states during a portion of the convention.

Current research projects sponsored by the National Renderers Assn. are concerned in part with the possibility of developing a better product for "these very important customers of fat and animal protein," according to Robert J. Fleming, NRA president. Mr. Fleming, opening speaker at the convention, said research must consider ways of improving the feed ingredient as one means of saving the industry from a depressed price situation.

Because slaughter of livestock is increasing, production of tallow and fat will reach an all-time peak of 3.4 billion pounds during 1960, Mr. Fleming said. Since the domestic market can absorb only about half this amount, "it is up to the renderers to create new markets and extend existing ones."

Details of Research Program

Gene Hopton, an NRA director, discussed the association's current $160,000-a-year research program in greater detail. He said the responsibility for the success of the fats-in-feed program is due largely to past research. "There is the possibility that further research could produce a dry fat form that might prove highly useful," he said.

Another outlet for the renderers' product could be feed manufacturers in foreign countries, according to John Haugh, second vice president of the NRA. Reporting on a recent trip to nine Latin American countries, he explained that importers find U.S. tallow and fat to be the "best in the world," and these markets "offer great potential for consuming portions of the surplus 50%."

President Reelected

Kenneth Reinhart, Kings-Tulare Tallow Works, Hanford, Cal., was reelected president of the association. Bruce Hallat, Gordon-Young (BC), Ltd., Vancouver, British Columbia, was elected vice president, and Nels A. Hamberg, Peterson Tallow Co., Inc., Emeryville, Cal., was reelected secretary-treasurer.

FIELD WAFERING SEEN DELAYED

DAVIS, CAL.—"There is much to be done before field wafering will be an important factor in hay harvesting." So stated John B. Dobie, agricultural engineer at the University of California, in summarizing a progress report on hay wafering. Mr. Dobie made the report at the winter meeting of the American Society of Agricultural Engineers in Chicago.

The engineer said: "Although there has been considerable progress in the development of hay wafering equipment, experience to date indicates numerous machine design problems and some inadequacies of the product. The wafers lack many of the density and handling characteristics desired to make the change to bulk handling for hay. Machine capacity is inadequate for most farms, and conditions suitable for field operation are too limited to permit reasonable annual production per machine. Machinery for handling wafers from field to storage and for transporting wafers has been improvised from existing equipment rather than developed as a system. Obviously, there is much to be done before field wafering will be an important factor in hay harvesting."

Veterinarian Joins Delaware Laboratories

MILLSBORO, DEL.—Appointment of Dr. Paul R. Lindenmaier as a veterinary specialist in pathology and diagnostics for Delaware Poultry Laboratories has been announced by Dr. H. N. Lasher, director of laboratories.

Dr. P. Lindenmaier

Dr. Lindenmaier will serve under Dr. A. S. Cosgrove, who is in charge of diagnostic and pathology services for the company.

Prior to joining the company, Dr. Lindenmaier was engaged in the private practice of veterinary medicine. Previously, he was engaged in graduate research work at New York State Veterinary College, Cornell University. He received B.S. and M.S. degrees from the university's College of Agriculture, and a Doctor of Veterinary Medicine degree from its Veterinary College.

Roy Davis to Head Portland Exchange

PORTLAND, ORE. — Roy Davis, Archer-Daniels-Midland Co., has been named president of the Portland Merchants Exchange. Elected vice president was R. E. Ferguson, Pacific Maritime Assn. Wayne Daggett, North Pacific Grain Growers, will serve as secretary-treasurer and L. C. Fowler was reappointed manager.

New members of the board of directors include E. E. Anderson, American Mail Line; Mr. Daggett; Darrell Woodland, General Mills, Inc., and Neil Whisnant, Brady-Hamilton Stevedores. Holdover directors are Mr. Ferguson and A. W. Howard, Portland Shipping News.

When you examine the facts... you can't beat a "WINONA" Bucket!

TAPERED SIDES PERMIT NESTING TO ECONOMIZE STORAGE AND SHIPPING.
PROPERLY LOCATED BOLT HOLES ASSURE PERFECT LOADING AND DISCHARGE.
HIGH TAPERED SIDES PROVIDE SCOOP ACTION WHEN LOADING AND AVOID SPILLAGE.
ROUNDED BOTTOM MAKES FOR FAST, CLEAN DISCHARGE AND ELIMINATES CUTTING OF BELT.
PROJECTION-WELDED, SERRATED FLANGES PROVIDE MAXIMUM STRENGTH AT CRITICAL LOCATIONS.
CORRECTLY POSITIONED LIP FOR SMOOTH PICK-UP AND EFFECTIVE DISCHARGE.

With over 25 years of research behind the "Winona," you can count on high speed performance, or you can operate at low speed, with close spacing and get equally successful results.

It's true—the "Winona" Grain Elevator Bucket gives you advantages which you have desired but have not been able to obtain. It is the finest "all-around" Bucket you can buy—superior in design, construction and operation.

If you operate high speed elevators you will obtain the desired capacity without overworking the legs, or, if you operate at slow speed, with buckets closely spaced, you will obtain astonishing results.

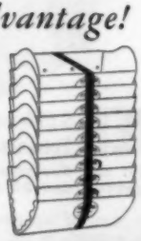
We are proud to have perfected the "Winona" with its improved pick-up and greater load-carrying ability without troublesome back-leg loss.

Equip your elevator with "Winona's" and compare the results. You will be a booster after your initial installation.

Another Big Advantage!

TAPERED SIDES PERMIT NESTING

"Winona" Buckets in 4 x 3 size are banded in 20's. Larger sizes are in lots of 10. Imagine the saving in shipping and warehousing!



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"Winona" Buckets are stocked by our warehouse distributors, also at our factory branch stores. Consult your dealer.

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ENGINEERS — HAMMOND PRODUCTS — MANUFACTURERS
TRADE MARK REG. U. S. PAT. OFFICE

NATURAL BALANCED ENZYMES TO DO WONDERS FOR YOUR FEED

backed by 15 consecutive years of research— ACTAZYME

for CATTLE

ACTAZYME is a "natural" for ruminants. The principle was originally used in distillery mashing as a replacement for malt and resulted in greater yields of alcohol from a given amount of grain. Processes in the bovine rumen have much in common with those in the distillery fermenter. Cattle, too, show a definite and immediate response to ACTAZYME.

for SWINE

ACTAZYME in swine feeds produces trim, sleek, compact meat-type carcasses that yield flavorful, lean pork on a minimum of higher fiber rations. It offers the utmost in economy coupled with the most desirable meat production.

for POULTRY

ACTAZYME for poultry will change your conception of poultry rations, too. No need to use high protein low fiber rations. ACTAZYME produces more economically with less costly rations and consequently reduces the cost of top quality poultry and eggs.

Science has long known that enzymes offer tremendous possibilities in fast gains for animals though natural methods. But how to break and harness enzymes has been a knotty problem.

Fifteen years' work with enzymes in nutrition have demonstrated that a plant which produces complex enzyme systems to break down organic matter in nature and prepare it in suitable form for re-use by plants and animals is the most satisfactory solution. ACTAZYME is such a product. Let us send you amazing reports of results when ACTAZYME has been added to feeds.

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Gentlemen:

Please send complete information, test reports, testimonials and prices on your product ACTAZYME.

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Terminal Elevator Superintendents Plan New Orleans Meeting

CHICAGO—Terminal grain elevator and processing superintendents from the U.S. and Canada will hold their 31st annual convention at the Jung Hotel, New Orleans, March 13-18. The six-day event is sponsored by the Grain Elevator & Processing Superintendents, headquartered in Chicago.

Robert H. Jordan, program chairman, Public Grain Elevator, and Charles J. Winters, W. L. Richeson & Sons, both of New Orleans, announced that the following symposiums will take place during the convention: "Storage Behavior, Sanitation, Fumigation and Aeration," Henry H. Kaufmann, chairman, Cargill, Inc., Minneapolis; "Needed Inventions," James Crombie, Rice Grain Corp., Chicago, chairman, followed by a speech given by Charles H. Logan, industrial relations counselor, New Orleans, on "The Practical Side of Labor Relations."

An eight-man panel discussing "Dust Explosions" will be headed by Clifford R. Lindeman, Saskatchewan Wheat Pool, Port Arthur, Ontario, Canada. Leroy H. Gretzer, Cargill, Inc., Minneapolis, will lead the group in a consideration of plant safety.

Personnel relations will have George L. Kitchen, F. H. Peavey & Co., Minneapolis, presiding, and Herman M. Kroloff, Continental Grain Co., Phoenix, will suggest ways of developing responsibility with his group of panelists.

Discussions on structural maintenance and power and transmission will have as chairman, Vincent Blum, Morris Grain Corp., St. Louis, and George A. Thompson, Cargill, Inc., Savage, Minn., respectively.

Frank Deebach, General Mills, Inc., Chicago, will head a panel on changes in grain standards.

Other roundtable discussions include: Corn and drying, barley and malt, wheat, soybean, flax, oats and rye, grain sorghums and problems dealing with truck and marine unloading and grain and products handling.

"Information, Please'" will bring out a technique of "Brainstorming" which will be explained by one of the panelists, Leo Pothetes, J. B. Ehrsam & Sons Manufacturing Co., Kansas City.

Fifty trophy cups will be awarded to plants having a perfect safety record during 1959 at a banquet held early in the week. This is the largest number of such awards ever presented by the association.

Other events being planned for the delegates and their wives include a tour of the French Quarters, a visit to the ante-bellum homes, a boatride on the Mississippi, elevator tours and a fashion show for the ladies.

FEED FIRM OPENED

LAURENS, IOWA—Nielsen Feed & Milling, formerly Nelson Feed & Supply, has been opened for business here.

Jim Hawk Appointed Rolfes Sales Engineer

BOONE, IOWA—Jim Hawk, Council Bluffs, Iowa, has been appointed South Kansas sales engineer of the Rolfes Aeration and Electronics Co., Boone, Iowa, according to George A. Rolfes, president.

Jim Hawk

Mr. Hawk comes to the Rolfes firm from Honeggers' & Co., Inc., where he served the past four years as a district manager in its steel building and farm equipment division.

Mr. Rolfes said the addition of Mr. Hawk brings the company's total sales force to 16 salesmen. The Rolfes company designs, manufactures and installs aeration and temperature systems.

Firm Has Drug to Combat 'Water Belly'

KANSAS CITY—A drug, already being used by veterinarians in dogs, cats and horses, is said to have demonstrated promising treatment for urinary calculi, commonly known as water belly.

Dr. I. M. Paton, Jensen-Salsbery Labs, Inc., Kansas City, maker of the drug called Jenotone, says it "will offer veterinarians a new weapon to combat the problem that ranked third as a cattle killer in western states last year."

Jenotone "acts directly on the muscles of the organs concerned, instead of indirectly by way of the nervous system," he said.

"Its normalizing action often allows passage of calculi (also called kidney stones and urinary gravel) and thus eliminates many stoppages that could result in rupture of the bladder, releasing into the body cavity waste materials that poison the animal."

Dr. Paton says that clinical research, under farm and ranch conditions, has shown Jenotone to be effective therapy in treatment of urinary calculi in cattle if administered in the early stages before rupture of the bladder or adhesions have occurred.

Commodity Exchange Official Appointed

WASHINGTON—The U.S. Department of Agriculture has announced appointment of Arthur R. Grosstephan as deputy administrator of the Commodity Exchange Authority. Mr. Grosstephan, who has been director of the compliance and trade practice division of the CEA since 1955, has had 22 years experience in compliance work. Last year he received a sustained superior service award for "exceptional ability and effectiveness in directing investigations and compliance work for the Commodity Exchange Authority."

A. R. Grosstephan

Mr. Grosstephan was graduated from the University of Illinois in 1925 with a B.S. in agriculture. In 1937, he joined the department as investigator in the Chicago office of the Commodity Exchange Authority.

Returning to the department from the Army in 1946, he became chief of investigations and compliance in the CEA Chicago office. In 1954, he came to Washington as assistant director of the CEA's compliance and trade practice division and has headed that division since January, 1955.

USING BASIC HOPPER DESIGNS

Lemanco

CAN BUILD EXTRA CAPACITY FROM 20 TO 94 TONS

At 40 Pounds Per Cubic Foot

for grains • ingredients

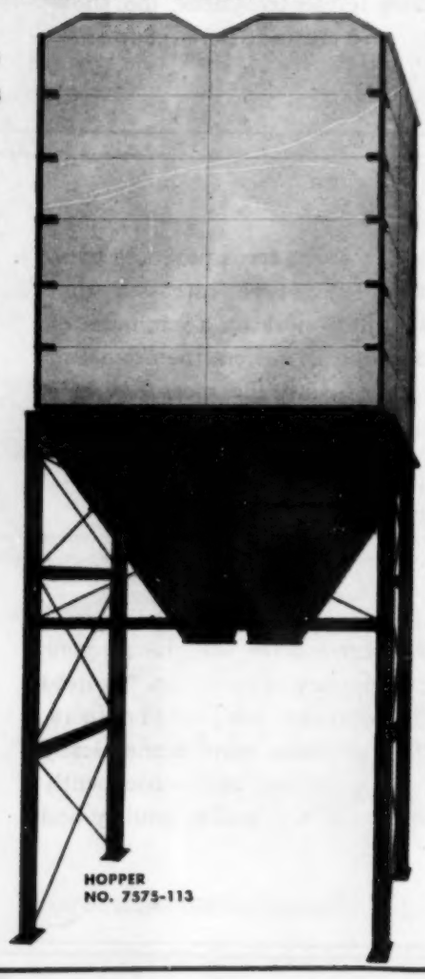
concentrates • finished feeds

The Lemanco system of prefabricating steel BULK STORAGE BINS for inside or outside use is sufficiently flexible that custom planned storage can be offered at mass production prices and delivery. Modular design permits shipment by truck to all points.

The solidly welded base and the Lemanco patented corner holding the side sheets in tension introduces a new concept in the construction of feed storage facilities. Shown are two examples of bin clusters with capacities of 20 tons and 94 tons. These bin clusters are formed by using four hoppers with common wall partition giving four storage compartments.

Lemanco bins are available for inside or outside storage with models available for side draw or corner draw. This construction permits joining in a straight line as well as shown.

When inquiring about these bins be sure to specify if pneumatic delivery will be used.



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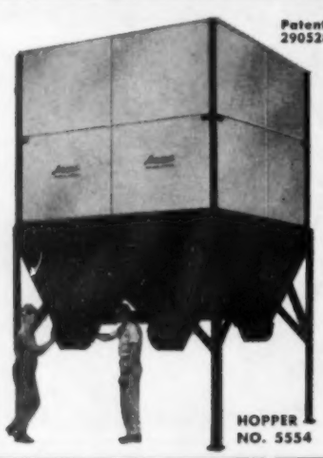
Patent 2905283



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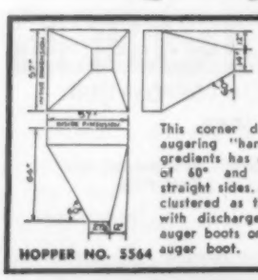
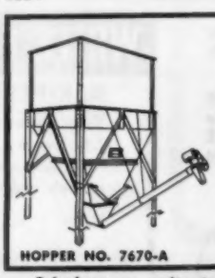
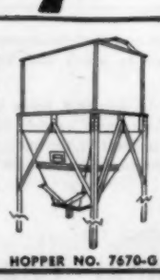


This corner draw hopper for augering "hard-to-handle" ingredients has a minimum pitch of 60° and two practically straight sides. Hoppers can be clustered as the 5554, above, with discharge into individual auger boots or into a common auger boot.

HOPPER NO. 5564



This general purpose side-draw bin for use with auger or weigh buggy has a capacity of 5¾ tons and a maximum capacity of 8¾ tons with another tier of sides. The bin can be used inside as well as outside. Inverted rotary gates, as shown, permit partitioning. Other type gates also available. The minimum 60° pitch of this hopper makes it useful for many applications. It can also be clustered.



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HOPPER NO. 7670-G

Telephone or write today for prices and further information.

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Norman ("Shorty") Peterson, Havelock, Iowa, feeds out about 1200 cattle a year. "We started feeding supplement with Stilbosol as soon as it became available in '54," Peterson explained. "We just won't feed without it. Why, we've had steers to gain as much as 3.68 pounds per day for their entire time on our farm. Of course, we buy cattle with built-in gainability." This was Mr. Peterson's tip-of-the-hat to the Drayton Ranch at Valentine, Nebraska, which supplied him with the calves that went on to capture first place in the heavyweight Angus division.

Again...Stilbosol-fed carlots rank high at International

Peterson and Brechler load awarded first prize in heavyweight Angus group at Chicago's International Livestock Exposition. Heavy Herefords take second. Heavy Angus and light Herefords place third in their classifications.

Wessel is a familiar name at the International. A veteran Stilbosol feeder, Winston Wessel (dark jacket) has taken home many honors with his fine fat cattle since 1940. This year, in partnership with his neighbor, Roland Kroymann (far right), he added third prize in the heavyweight Angus class to his list of winners.

Maurice Crawford of Wellman, Iowa, fed and groomed his Stilbosol-fed steers to second prize in the heavyweight Hereford group. He was a mighty happy man as he said, "Sure can't complain of the results on this load of steers!"

Harold Alfredson from Big Rock, Illinois, placed third in the lightweight Hereford class. Harold does an outstanding job with Stilbosol supplements and feedlot mechanization to increase gains and cut costs of building beef.

Lilly

Makers of **Stilbosol®** (diethylstilbestrol premix, Lilly) • **HYGROMIX®** (*S. hygroscopicus* fermentation products, Lilly)
Micro-Pen® (special coated procaine penicillin G, Lilly) • Procaine-Penicillin-G • Vitamin B_{12}

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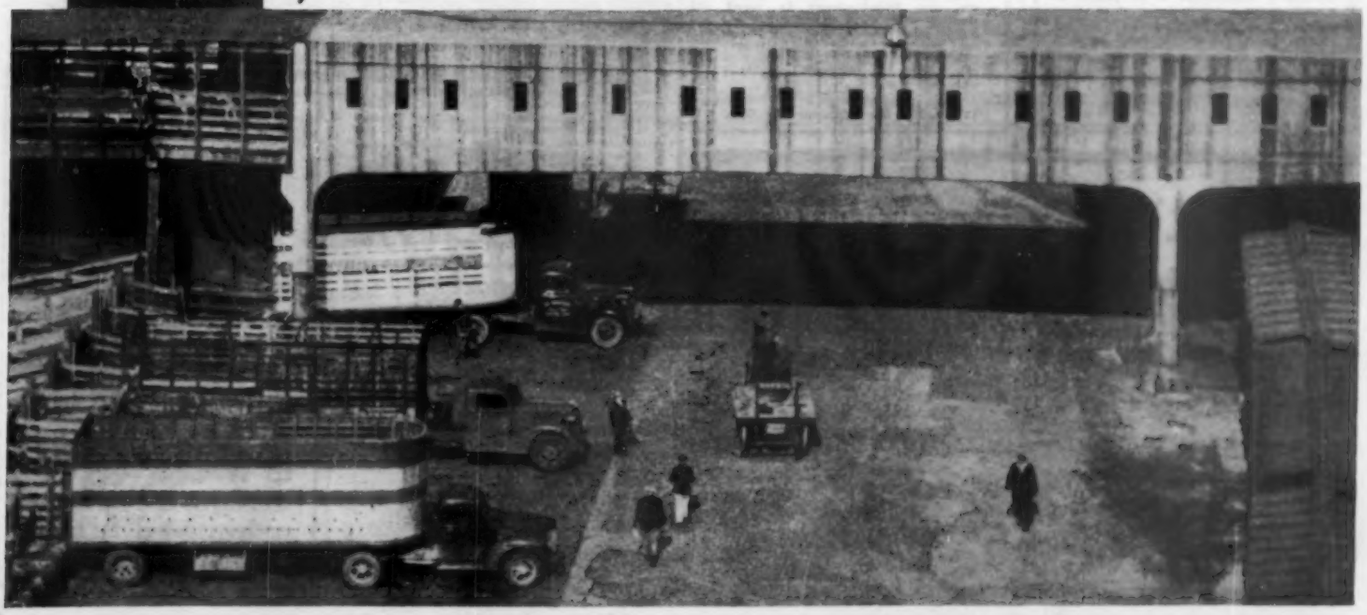

☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 20¢ per word; minimum charge $3.00. Situations wanted, 15¢ a word; $2.25 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 25¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $13.00 per column inch. No discount on ads ordered for more than one insertion.
All Want Ads cash with order.

SITUATIONS WANTED

NUTRITIONIST—10 YEARS' EXPERIENCE in research, formulation and quality control. Knowledge of poultry diseases and poultry flock management. Management and sales experience. Address Ad No. 5689, Feedstuffs, Minneapolis 40, Minn.

AVAILABLE—YOUNG MAN, 27, SEEKING position with future growth. Agricultural graduate, feed sales and service experience. Interested in merchandising, sales, marketing or market research. Address Ad No. 5675, Feedstuffs, Minneapolis 40, Minn.

DOES YOUR ORGANIZATION HAVE A need for a veterinarian? Fifteen years' practice dealing with large and small animals. Fair public speaker and sales ability. A full brochure or interview at my expense for all concerns who are desirous of rounding out their staff. Address Ad No. 5666, Feedstuffs, Minneapolis 40, Minn.

MACHINERY WANTED

WANTED — USED PELLET COOLER, preferably horizontal belt type. Abingdon Milling Co., Abingdon, Ill.

WANTED—3-TON VERTICAL MIXER IN good condition. (Preferably Bluestreak.) Belstra Feed Mix Sales, DeMotte, Ind.

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WANTED—ONE (3-TON) NO. 548 HOWES Eureka mixer, without motor. O. W. Meyer, Napoleon, Ohio.

TWO EACH 24x40 OR 30x40 USED GRU-endler mills, or two each 24x24 used Jacobson mills. Dixon Dryer Co., P. O. Box 217, Phone Osborne 8-2301, Dixon, Cal.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

HELP WANTED

AGRICULTURAL ADVERTISING COPY writer wanted by large midwestern firm dealing in all types of agricultural merchandise. Knowledge of display design helpful. Good, permanent position with talented, well-adjusted people. Address Ad No. 5657, Feedstuffs, Minneapolis 40, Minn.

MAJOR MANUFACTURER OF BULK FEED delivery units needs aggressive, personable salesman to sell in central Midwest territory. Locate around mid-Illinois. Salary plus commission. Car and travel expenses furnished. Paid vacation, insurance program, and other fringe benefits. Feed industry, truck or comparable sales experience desirable. Address Ad No. 5684, Feedstuffs, Minneapolis 40, Minn.

SUPERINTENDENT WANTED

Large grain company has an opening for man between the ages of 35-45. Must be thoroughly experienced in all phases of grain elevator operations. Part time travel. College background essential. Please furnish complete data—personal information, education, experience, references and salary expected. Address ad No. 5614, Feedstuffs, Minneapolis 40, Minn.

HELP WANTED

SALES ENGINEERS: PRESENTLY SELL-ing, or familiar with, feed milling machinery, pellet mills, coolers, liquid blending equipment, feed mill layouts. Feed production manager acceptable. Travel Monday through Friday. Sober and reliable. Age—30 to 40. Engineering background, heavy emphasis on sales. Interested in high earnings—$15,000 per year or better. Territories available in Nebraska, Illinois, Indiana, Missouri, and Oklahoma. Reply only if you possess above qualifications and are presently successful. Address ad No. 5607, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

12½-TON TOLEDO DIAL SUSPENSION hopper scale, like new, 32 inch dial, Model 2500. O. W. Meyer, Napoleon, Ohio.

FOR SALE—SPROUT-WALDRON J1 CORN cutter. Excellent condition, $75. Valley Farm Supply, Dover, Ohio.

CALIFORNIA MASTER PELLET MILL, 30 H.P. motor, completely overhauled, perfect condition. Address Ad No. 5691, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—DAFFIN MOBILE GRINDER on 1955 G.M.C. truck or 1957 Ford truck. Low mileage and diesel hours. Kenneth F. Miller, RD No. 2, Ilion, N. Y.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P.O. Box 574, Jefferson City, Mo.

1957 DAFFIN MOBILE MILL, 34,000 miles, Chevrolet truck, low diesel time, excellent mechanical condition, $2,750 down, $9,000 financing available, located in Minnesota. Address Ad No. 5631, Feedstuffs, Minneapolis 40, Minn.

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ONE 50 H.P. CENTURY CALIFORNIA pellet mill. TEFC motor. Write or phone Buford Hall, Cameron Feed Mills, North Little Rock, Ark.; FRanklin 4-9231.

FOR SALE—SCHMUTS MODEL LH 1949 two color printing press. Two HA payloaders. All in good condition, priced reasonably. Dixie Fertilizer Co., Inc., Box 1111, Shreveport, La.

DAFFIN FEEDMOBILE — GOOD CONDI-tion after major overhaul. Bargain price $6,950 for fleet owner needing more service facilities in peak season. Address Ad No. 5686, Feedstuffs, Minneapolis 40, Minn.

ONE RICHARDSON GGG38 DUPLEX AU-tomatic bagging, Nema 9; one No. 158 Richmond gyro corn grader. E. H. Beer & Co., Inc., S. Newkirk St. and Ibsen Ave., Baltimore 24, Md.

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FOR SALE—ENCLOSED MOTORS; Richardson scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

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100 H.P. ACE SPROUT-WALDRON PEL-let mill, complete with motor, coolers, pneu-vac air system; 60 H.P. Sprout-Waldron pellet mill and cooler; 50 H.P. heavy duty California pellet mill; 5-ton S. Howes Eureka horizontal mixer, with silent chain drive and 40 H.P. motor. Call or write J. E. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.; Phone 6-2197.

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Central Soya Listed On Stock Exchange

NEW YORK — Central Soya Co., Inc., Fort Wayne, Ind., soybean processing and concentrate feed manufacturing firm, was listed on the New York Stock Exchange Feb. 15.

The company will be known on the exchange trading floor by the symbol "CSY." Previously, Central Soya stock had been traded only on the over-the-counter markets.

In a listing ceremony at the start of the day's trading, the company was represented by Harold W. McMillen, chairman of the board of directors; E. T. Schele, secretary-treasurer and a member of the board of directors; Cole J. Younger, board of directors, and J. L. Krider, vice president. G. Keith Funston, president of the New York Stock Exchange, was host to the Central Soya group.

Mr. McMillen said that the company anticipates a broader interest in its securities as a result of the listing on the exchange. A total of 2,824,452 shares of the firm's common stock is being listed.

Central Soya currently has approximately 8,000 shareholders. Cash dividends have been paid without interruption since 1942, the most recent being a quarterly cash dividend of 27½¢ per share, payable Feb. 15. On Nov. 4, 1959, the company split its capital stock on a 2-for-1 basis.

FEED MAN PROMOTED

GREGORY, S.D. — Promotion of Carroll Bruun to supervisor of maintenance and field service has been announced by Midwest Feed & Pelleting Co. He has been plant manager of the company's pelleting plant at Burke. Mr. Bruun will be employed by Mobile Pellet Mills Co., subsidiary of Midwest Feed & Pelleting Co.

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Products for Disease Control Reviewed At New Hampshire Poultry Meeting

By RICHARD WARREN
University of New Hampshire

DURHAM, N.H. — Servicemen, hatcherymen, pathologists, extension workers and poultrymen from the eastern half of the U.S. and Canada attended the ninth annual Poultry Health Conference held at the University of New Hampshire Feb. 4-5.

Many new products were discussed that have been developed for disease control, but aren't yet available to the industry. These included terephthalic acid for increasing the effectiveness of antibiotics; tylosin, a new antibiotic for chronic respiratory disease control; hygromycin for control of capillary worms; Sevin and Ronnel for parasite control, and Serpasil, a tranquilizer. Some of these may never be marketed because of the Food & Drug Administration requirements, it was indicated.

Keynote speaker of the conference was Nevis Cook of the Boston office of FDA. He spoke on "Food and Drug Administration and Feed Additives." He said that the increased use of chemicals in agriculture has required changes in the law "to assure that the use of these potent and dangerous chemicals is controlled and regulated so as to protect the public health." (See accompanying story.)

Synovitis

Dr. D. C. Shelton, department of agricultural biochemistry, University of West Virginia, discussed "Control and Prevention of Synovitis." With this disease there is no treatment for a bird that has been sick long. These should be culled, and the remainder put on a low calcium diet and given 200 gm. Aureomycin for a week, followed by 100 gm. per ton until they go to market. This will prevent further spread, he said. As a preventive, 50 gm. per ton to eight weeks, or 25 gm. with a low calcium diet is helpful. If terephthalic acid becomes available, this will further reduce the amount of drug needed, Dr. Shelton added.

Dr. E. H. Peterson, department of veterinary science, University of Arkansas, discussed "Accepted Methods in Use of Antibiotics Including Potentiation." For systemic medication, he said, that is where the drug must get into the blood stream, reducing the calcium in the ration makes Aureomycin three times as effective when fed. Adding terephthalic acid makes it four times as effective and using a low calcium diet and terephthalic acid will make it 10 times as effective. This means that 100 gm. per ton when potentiated by these two methods is equal to 1,000 gm. per ton. Dr. Peterson showed research on how this could be used to control the chronic respiratory disease complex. This is impractical to do without these methods of potentiation.

According to Dr. Peterson, the following specific program has proven "highly successful" in the clinical control of CRD in broilers:

"1. Reduce the calcium content of the starter mash to the lowest 'safe' level. (Accomplished in this case by deletion of Ca carbonate from basal feed formulation.)

"2. Administer 150 gm. ton Aureomycin + 8 lb. TPA from day-of-age through the third week (21 days).

"3. Vaccinate at approximately the third day against Newcastle disease and infectious bronchitis using an aerosol-administered vaccine. (Aerosol administration regarded as superior.)

"4. Delete the anticoccidial for the duration of the medication period. (An economy measure, as potentiated Aureomycin is a very strong anticoccidial.)"

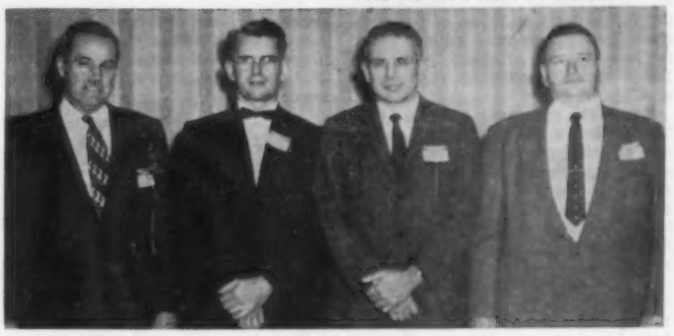
"There is every probability that a correspondingly effective control program can be devised without terephthalic acid-using reduced calcium concentrations as the sole potentiating mechanism," Dr. Peterson said. "The precise details of such a program are yet to be worked out, but the cost inevitably will be higher than with the program outlined, for a considerably higher content of Aureomycin will be required in the medicated feed. For the economic use of Aureomycin, there is no substitute for terephthalic acid."

New Antibiotic

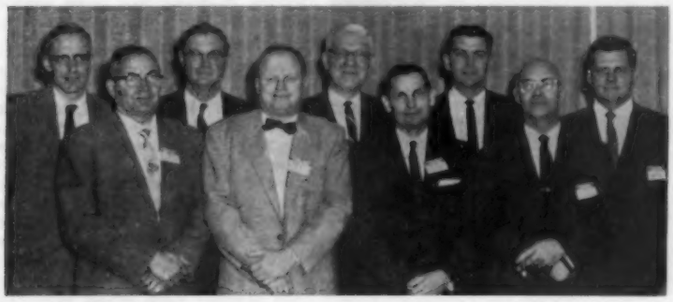
Dr. L. F. Barnes, research veterinarian, Eli Lilly & Co., Greenfield, Ind., discussed "Controlling CRD with Tylosin." This is a new antibiotic that is quite effective when injected, used in the water or as a dust. It is not effective when used in the feed.

Dr. Barnes said Tylosin has been shown to be effective against experimental pleuropneumonia-like organism (PPLO) infections and naturally occurring CRD of chickens. Tylosin is a research antibiotic and has not yet been approved for commercial use.

"Tylosin has been highly effective against CRD in chickens," said Dr. Barnes, "but research is being continued to determine most effective methods of administration and dosages. Results of completed experiments indicate that 10 mg. Tylosin per pound of body weight injected



SPEAKERS—Some of the speakers and chairman Feb. 5 at the New Hampshire Poultry Health Conference are shown (left to right): Judson Sanderson, E.C.W.L. Hopkins, Inc., Greenfield, N.H., chairman; Dr. Monte Frazier, animal diseases department, University of Connecticut; Dr. Charles Helmboldt, animal diseases department, University of Connecticut, and Dr. George Belloff, research veterinarian, CIBA Pharmaceutical Products, Inc., Summit, N.J. (Picture of panel members on page 53.)



SPEAKERS—Several speakers and chairmen Feb. 4 at the New Hampshire Poultry Health Conference are shown (left to right): Dr. W. D. Gross, veterinary science department, Virginia Polytechnic Institute; Dr. E. H. Peterson, veterinary science department, University of Arkansas; Nevis Cook, chief, Boston office, Food & Drug Administration; Dr. Roland Winterfield, research veterinarian, American Scientific Laboratories, Madison, Wis.; Dr. K. B. Kerr, helminthologist, research division, Dr. Salsbury's Laboratories, Charles City, Iowa; Dr. D. C. Shelton, agricultural biochemistry department, University of West Virginia; Dr. L. F. Barnes, research veterinarian, Eli Lilly & Co., Greenfield, Ind.; Sam Stevens, Wirthmore Feeds, Inc., Waltham, Mass., morning chairman, and Richard Goodell, Nichols Inc., Exeter, N.H., afternoon chairman. (Picture of panel members on page 53.)

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intramuscularly or 2 gm. of the antibiotic per gallon of drinking water for five days are effective treatments for naturally occurring field cases of CRD."

Research indicates, he said, that Tylosin has a wide margin of safety and is relatively nonirritating at the site of injection. It has been successfully administered as a dust (inhalation) without signs of irritation. Tylosin is soluble in water and certain organic solvents and is quite stable in aqueous solutions, he said.

Dr. W. D. Gross, department of veterinary science, Virginia Polytechnic Institute, discussed "How to Control Air Sac with Present Means." He recommended good housing and ventilation, and "Security Management," which means quarantine and proper vaccination. Of these, he felt that good management was the most important.

External Parasites

"Control of External Parasites" was discussed by Dr. K. B. Kerr, helminthologist, research division, Dr. Salsbury's Laboratories, Charles City, Iowa. These do a lot more damage than is usually recognized, he contended. They weaken the bird, resulting in slower growth, lower egg production and more disease problems.

There are a number of effective insecticides that, when used properly and according to the manufacturer's instruction, will control these parasites. The new systemic insecticides (used in the feed) show promise, but may never be approved for use, it was reported.

Dr. Roland Winterfield, research veterinarian, American Scientific Laboratories, Madison, Wis., discussed "Vaccination for Laryngotracheitis." Recent research has proved that the vent-drop method of vaccination is as good as the brush method. It can be used on broilers 9-10 days old. The triple vaccine (laryngotracheitis, Newcastle disease, infectious bronchitis) by the vent-drop method is doing a good job. Laryngotracheitis vaccine must be handled with care, as a high titer is very important.

Environment Panel

The evening panel on "The Influence of Environment Upon Disease Control" brought out a lot of interesting information.

Dr. C. A. Bottorff, American Cyanamid Co., Princeton, N.J., felt that better house and temperature control would go a long way toward controlling disease outbreaks.

Dr. William Mellen, department of poultry husbandry, University of Massachusetts, showed how birds are able to maintain a constant internal environment even when the external environment changes. They can, however, be overwhelmed, and this results in disease.

Harold Gulvin, Eastern States Farmers Exchange, West Springfield, Mass., discussed "Insulation and Ventilation as it Influences Environment." He recommends well insulated houses and exhaust fan ventilation for the colder climates.

Ralph Culton, Wallace Hy-Cross Hatcheries, Inc., Doylestown, Pa., discussed "Field Observations" on the influence of environment upon disease control with layers. He brought out that outbreaks of leucosis, CRD, and coccidiosis were influenced by environment.

Dr. Thomas Coulton, Cooperative Mills, Inc., Bridgeville, Del., discussed the same subject with regards to broilers. He felt the serviceman has a big influence on the success of broiler operations.

Capillaria Worms

"New Information on Capillaria Worms" was discussed by Dr. Monte Frazier, department of animal diseases, University of Connecticut. He brought out that the type of capillaria found in New England has a direct life cycle. It is very common, he said. About two thirds of the birds submitted for diagnosis in Connecticut are affected with them. They multiply rapidly. Dr. Frazier said there is no drug on the market now to control these worms. The use of an additional 12,000 units of vitamin A per pound of feed, in some cases helps to overcome the damage they cause. Management is extremely important in reducing the damage from these worms. Hygromycin, an antibiotic, has been field tested, and found to reduce the numbers of worms in flocks, but more work is needed to verify these results.

Tranquilizer

Dr. George Belloff, research veterinarian, CIBA Pharmaceutical Products, Inc., Summit, N.J., discussed "The Use of Tranquilizers in Times of Stress." He reported on work where Serpasil, a tranquilizer, was used. It was helpful in protecting birds against temperature stress; crowding and social adjustments. Its use resulted in improved egg quality, improved egg weight, increased egg shell thickness, reduction in broken and cracked eggs, better production and feed conversion of both broilers and laying flocks and control of aortic rupture in turkeys. Dr. Belloff feels that this material will soon be available.

The final panel was moderated by Dr. Charles Helmboldt, department of animal diseases, University of Connecticut.

A complete summary of the conference will be available in a few weeks from the poultry department, University of New Hampshire, Durham, N.H.

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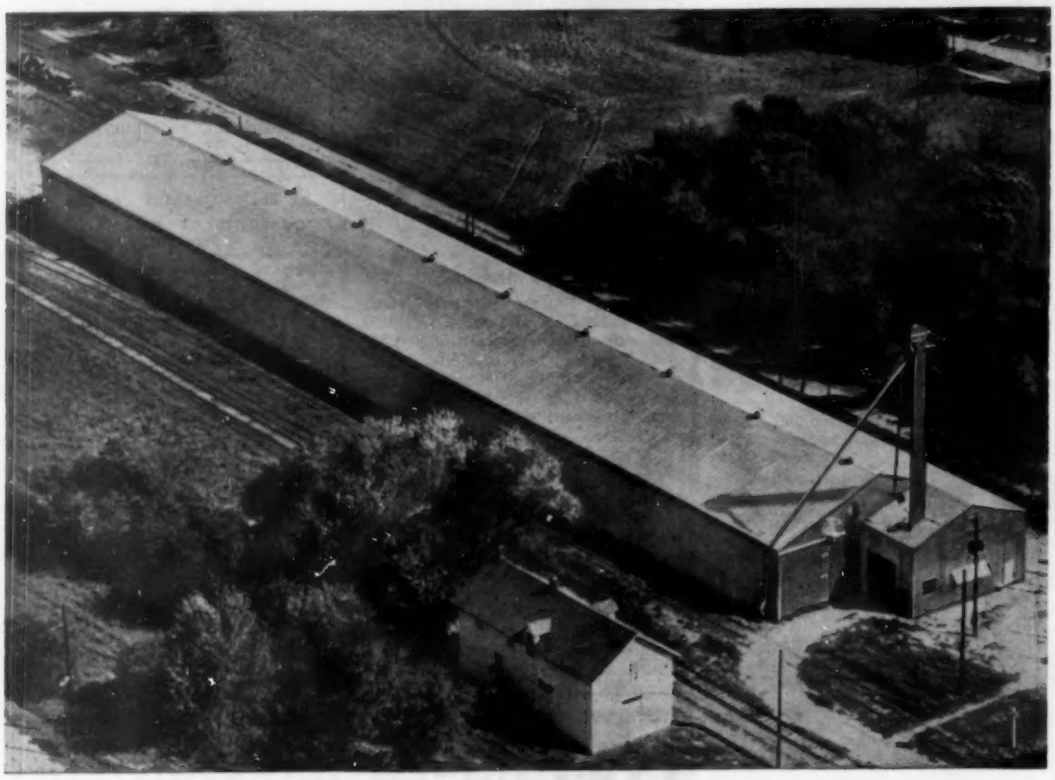

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Equipment Installations

BOONE, IOWA — Rolfes Grain Aeration & Electronics Corp., Boone, has announced 81 equipment installations in 20 states.

Installations were as follows: Colorado, 1; Georgia, 1; Idaho, 2; Illinois, 15; Indiana, 4; Iowa, 6; Kansas, 6; Kentucky, 1; Maryland, 1; Michigan, 3; Minnesota, 3; Mississippi, 1; Missouri, 9; Nebraska, 3; North Carolina, 4; Ohio, 5; Oregon, 1; Texas, 4; Washington, 7, and Wisconsin, 4.

AD AGENCY NAMED

FT. WORTH — Daily Advertising, Ft. Worth, has been appointed advertising agency for Riza Manufacturing Co., Cleburne, Texas. Riza Manufacturing produces feed mixing machinery.

Most Ingredients Take Another Dip

Most ingredient prices dipped again this week along with continuation of draggy demand for formula feeds. The ingredient market drop from Feb. 16 to Feb. 23 was somewhere near an average of 15¢ ton for the nation.

Despite reports of plant shutdowns and cutbacks in soybean meal production, there was no strength displayed in the soy meal market. In fact, a further weakness developed between Feb. 16 and Feb. 23, but some markets seemed to show a more stable tone at the end of the reported week.

Linseed meal prices tumbled rather sharply.

The wheat millfeeds market was fairly steady. Demand was disappointing, but, in general, mills were reported to be grinding less flour, which kept pressure off the market.

Meat meal and tankage showed strength in the main markets, which amounted to one of the few gains of the week.

Alfalfa meal and brewers dried grains were off, as were gluten feed and most other ingredients.

Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	Feb. 23, 1960	Feb. 16, 1960	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	64.60	64.95	— .35
Cottonseed meal	61.05	61.20	— .15
Linseed meal	71.65	73.90	—2.25
Copra cake or meal	77.25	77.25	...
Peanut meal	56.00	59.00	—3.00
Index	83.9	84.4	— .5
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	70.25	70.10	+ .15
Tankage	69.55	69.15	+ .40
Fish meal	104.25	105.00	— .75
Index	67.4	67.5	— .1
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	47.50	49.00	—1.50
Dist. dried grains	57.20	59.20	—2.00
Brewers dried grains	45.25	45.60	— .35
Index	76.2	78.5	—2.3
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	39.60	39.35	+ .25
Midds. and shorts	40.40	39.10	+1.30
Index	72.3	70.8	+1.5
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	40.95	40.90	+ .05
Rice bran	29.00	30.50	—1.50
Index	62.7	63.1	— .4
ALFALFA MEAL			
Prices at prin. mkts.	56.35	56.75	— .40
Index	108.5	109.2	— .7
MOLASSES FEEDING			
Prices at prin. mkts.	21.34	21.50	— .16
Index	63.5	64.0	— .5
ALL FEEDSTUFFS			
Index	77.9	78.1	— .2
FEED GRAINS			
Prices at prin. mkts.:			
Corn	38.40	38.90	— .50
Oats	47.40	47.30	+ .10
Barley	42.10	42.50	— .40
Grain sorghums	36.30	36.40	— .10
Index	63.3	63.9	— .6

*Base period of index is 1947-49.
Source: Agricultural Marketing Service, USDA.

Dallas Grain Exchange Elects New Officers

DALLAS, TEXAS — Cliff W. Cassidy, Jr., president of Cassidy Feed Mills, has been elected president of the Dallas Grain Exchange.

Other new officers elected at the organization's annual stockholders meeting in Dallas were G. L. Collins, J. C. Crouch Grain Co., vice president, and Vic Petta, Pearlstone Mill & Elevator Co., secretary-treasurer.

Directors elected were R. T. Cofer, Continental Grain Co.; J. R. Cooper, J. C. Crouch Grain Co.; Walter Blanton, Blanton Grain Co.; Lewis Perkison, Pearlstone Mill & Elevator Co.; R. S. Hjelmseth, Russell-Miller Milling Co.; Homer Rodgers, Doggett Grain Co., and R. D. Zanswalt, Burrus Mills, Inc.

Commercial Solvents Has Doubled Earnings

NEW YORK — Commercial Solvents Corp. 1959 consolidated net earnings rose sharply to $1.02 per share on 2,796,250 shares of common stock, and were double the company's earnings in 1958, it was announced by Maynard C. Wheeler, president, following a meeting of the board of directors.

Sales for the year of $70,381,175 represented a 9% increase over the 1958 total of $64,727,548.

Net earnings for 1959 were $2,850,740, as compared with $1,418,462, or 51¢ per share for 1958, and with $1,449,638, or 52¢ per share for 1957, with the per share earnings for these two years adjusted to reflect the 2% stock dividend issued Dec. 31, 1959.

Earnings for 1959 are after special charges of $833,173, or 30¢ per share, as compared with $682,216, or 24¢ per share in 1958, to adjust the carrying value of the company's investments in its Mexican and Canadian affiliates. Also, provision for accounts receivable considered to be uncollectible was substantially increased in 1959 to $556,856 from $58,496 in 1958.

Mr. Wheeler stated that the sharp earnings increase resulted mainly from greater efficiencies in costs and operations and from greater business volume in the basic areas of the Commercial Solvents' operations, which include methanol and nitrogen products and their derivatives, antibiotics and vitamins and thermal carbon blacks.

The board of directors also declared a 1960 first quarter dividend of 10¢ per share of common stock at the Feb. 23 meeting. The dividend is payable March 31, 1960, to stockholders of record at the close of business on March 4, 1960. The previous payment on Dec. 31, 1959, was a regular dividend of 5¢ per share and an extra dividend of 5¢ per share.

Production of Alfalfa Meal Off in January

WASHINGTON—Production of alfalfa meal in January was 1,500 tons less than January of the previous year, while meal stocks at producing plants were up by 165,800 tons, according to the U.S. Department of Agriculture.

Alfalfa meal production in January totaled 23,000 tons as against 24,500 in January, 1959. Both suncured and dehydrated alfalfa production were down from January, 1959. Suncured alfalfa production totaled 19,100, 100 tons less than the previous January, and dehy totaled 3,900 tons, 1,400 tons less than January, 1959.

Season's totals for the May, 1959-January, 1960 period, however, were up from the comparable period a year earlier. Total production through January, 1960, was 1,258,600 tons, compared with 1,201,200 through January, 1959. Dehy production was up to 1,114,500 from 1,062,900. Suncured rose from 138,300 to 144,100.

Stocks at the end of January were 255,000 tons as against 189,200 for January, 1959. Suncured stocks more than doubled from 5,400 to 13,500 tons. Dehy stocks rose from 183,800 to 241,500 tons.

E. J. Lang Joins Equipment Firm

DES MOINES, IOWA—E. J. (Bud) Lang has been appointed head of the utility sales division of Donald Corp., Des Moines, according to Donald Berman, president.

Mr. Lang was formerly vice president of Iowa Limestone Co., and earlier he was with Ralston Purina Co., Minneapolis.

Donald Corp. distributes industrial pumps, motors, controls, transformers, belting, filters, conveyors and compressors.

EFFECTIVE DATE

(Continued from page 1)

the "blitzes" by Secretary Flemming against industry use of certain chemical compounds are being submerged and that a White House decision to appoint a top committee of scientists to examine merits of the use of chemicals in food production will supersede the arbitrary activities of the Secretary of Health, Education and Welfare.

This does not mean that enforcement of the FDA act will be slowed, but it may mean that there will be a return to more authority over FDA activities by the food and drug commissioner. Some have observed that in recent months some of the commissioner's authority seemed to have been superseded by the activity of his boss as the secretary grabbed sensationalized publicity as in the case of cranberries and caponettes.

VIRGINIA

(Continued from page 1)

At an association business meeting held in connection with conference, members were told by a State Department of Agriculture official of the feeds collected under the feed and animal remedy laws and the ways in which funds were appropriated and spent for administration of the laws.

Resolutions presented by Dr. R. T. Parkhurst, Lindsey-Robinson & Co., Roanoke, and adopted by the association included:

1. Commendation of the Virginia Department of Agriculture for an improved inspection service.

2. A request that the commissioner of agriculture appoint a committee to review the state feed law in view of needed changes.

3. A request to the department of agriculture for a yearly report on fees collected and spent under the feed and animal remedy laws.

4. Approval of a coordinated study of research and diagnostic needs in view of disease problems.

Mr. Williams reported on some of the association activities, including work on problems in connection with the feed law and regulations.

Also, he noted that antibiotics and hormones for animal use are not now exempt from the state drug law but that it is hoped that there will be such an exemption soon.

The conference and convention program included talks on several timely nutritional subjects and industry topics. (A report on the discussions will appear in a subsequent issue of Feedstuffs.)

The convention and conference were sponsored by the feed association and Virginia Polytechnic Institute, with the Virginia Department of Agriculture and the American Feed Manufacturers Assn. cooperating.

TOP OF THE HOPPER

(Continued from page 2)

advertising that he will sell all ingredients at his cost and process the feed for $8 ton, plus $3 more for pelleting. These charges apply only if the customer takes 20 tons at a crack. He points out that he can save the feeders money because he can buy ingredients at volume prices and also save them labor costs.

IN CONTRAST, IT IS REPORTED THAT in California groups of feeders who bunch their orders are able to secure grinding, mixing and delivery service from feed manufacturers for an average rate of $5.20 ton. This type of buying, in which the large tonnage purchasers seek bids from several manufacturers, has narrowed feed production margins down to the point where mills are unable to provide research or quality control, according to observers.

THESE OBSERVATIONS ON INTEGRATION were made by N. S. Hadley of the department of agricultural economics at Purdue University, in Successful Farming: I believe that the control of agriculture will be gained and retained by those who can supply management most effectively and efficiently. I believe that for the production phase of agriculture farmers themselves will best be able to perform this function. But in order to do so they will have to be well educated, well informed and extremely capable managers. They will have to be well financed, they will specialize in one or a few enterprises and they will be experts in buying their supplies and selling their products.

There is little advantage in integrating the production of field crops, and there is a high degree of complementary relationship between crop production and livestock production.

THE POLICE GAZETTE, the Playboy Magazine of its day when we gave it furtive peeks at the pool hall newsstand, has switched its emphasis from girlie pictures to protection of the public health. Its current series of articles deal with "exposes" of dangers to the food supply caused by use of feed additives and drugs used to treat animal diseases. It is demanding action from Food and Drug Administration to be more diligent because of what it terms grave risks to consumers.

It is hard to measure the impact of articles of this type, but at least a corresponding amount of rational material must be published to offset such "scare" journalism in media that will get the attention of thinking people.

Of more serious concern to the food industry are attitudes such as this, expressed by the New York Times: "Mr. Flemming may have made mistakes in the past, but from the point of view of the nation as a whole it is preferable that any mistakes be on the side of excessive caution rather than of inadequate caution. Those who would use political pressure to weaken Mr. Flemming might do well to remember that consumers vote."

SOME COMMENTS ON CURRENT poultry industry dilemmas in the American Poultry & Hatchery Federation publication are closed by Ray E. Parmenter, APHF president, with this "snapper": "What a mess! Anyone want to switch to sheep and count them one by one all night to induce sleep? Just have pity on the poor sheep, who have been known to remark to each other: 'What a night this is going to be—we've had this character before! He used to be in the chicken business.'"

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand slow; supply ample; 400 D, 3,000 A 21½¢ lb.; 300 D, 3,000 A 21¢; 300 D, 2,250 A 19½¢; 300 D, 1,500 A 18¢; 300 D, 750 A 16¢; 75 D, 750 A 15½¢.

Minneapolis: Demand fair; supply ample; 10,000 A 34½¢ lb.; 300 D, 2,250 A 18¾¢ lb.; 300 D, 1,500 A 17½¢ lb.; 300 D, 750 A 16¢ lb.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 22¢ lb., f.o.b. Denver.

ALFALFA MEAL

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $63@65.

Philadelphia: Demand and supply fair; 17% dehydrated $68.50.

New Orleans: Demand fair; trend steady; supply adequate; 17% protein, 100,000 vitamin A, bulk $65@66, sacked $73@73.

Boston: Demand spotty; supply fair; dehydrated, 17% $67, sacked; suncured, 15% $47, bulk.

Ft. Worth: Demand good; limited offerings, immediate delivery; sacked: dehydrated, 17%, 100,000 A $65.80@66.80 rail, $64 truck; suncured, 13%, ¼-in. grind No. 1 $46 truck; 15% fine ground, dry $48, with 2% fat added $50 rail or truck.

Kansas City: Demand slow; trend weak; supply adequate; 17% dehydrated alfalfa, guaranteed 100,000 A on arrival, reground pellets $55 bulk, pellets $52@54 bulk; 18% dehydrated alfalfa, guaranteed 125,000 A on arrival, reground pellets $56@59 bulk; 20% dehydrated alfalfa, guaranteed 150,000 A on arrival, reground pellets $65; suncured alfalfa, demand slow, ample supplies, 13% pellets $35@35.50 bulk, No. 1 ¼-in. $37.50@38, No. 2 ¼-in. $35.50, sacked.

Omaha: Demand fair; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $52; sacked meal $57, Omaha.

Buffalo: Demand fair; trend easier; supply good; $71, sacked, Boston.

Portland: Demand slow; trend lower; supply ample; suncured, 15% $47; dehydrated $68.40.

Minneapolis: Demand remains slow; prices weaker; 17% dehydrated, 100,000 units vitamin A reground pellets down from $58@59 last week at $57; oiled reground pellets down from $60@61 last week to $59; sacked $4 more.

Chicago: Demand slow; trend easier; supply fair; 17% protein, dehydrated with 100,000 units vitamin A $58.50@60; 13% protein, suncured $40.50@42.

St. Louis: Demand slow; trend steady; supply ample; suncured, 13% fine, sacked $44; dehydrated, 17%, 100,000 A pellets $57, bulk.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $60.50.

Los Angeles: Demand slow; trend unchanged; supply adequate; dehydrated meal, 17% protein, 100,000 A $56@57; dehydrated pellet meal, 17% protein, 100,000 A $58@59; suncured meal, 15% protein $61@62; suncured crumbles, 15% protein $53@54.

Denver: Demand fair; trend steady; supply ample; dehydrated $48, sacked meal; $46, bulk pellets.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $50, delivered truckloads, sacked; 136,000 A unit dehydrated $72, delivered truckloads, sacked.

ANIMAL FAT (STABILIZED)

Boston: Demand fair; supply ample; tallow 5¾¢ lb., yellow grease 5¢ lb.

Ogden: Supply normal; $5.50 cwt.

New Orleans: Demand fair; trend easy; supply adequate; 5½@6¢ lb., tank cars.

Louisville: Demand fair; trend steady; supply good; in tanks, liquid form: bleachable white 5¾¢ lb.; white tallow 5¢ lb.; yellow grease 5¾¢ lb.

Ft. Worth: Demand good; supply limited; prime tallow, tank cars 5¾¢ lb.; drums 8¾¢ lb., f.o.b. north Texas packing plants with returnable drums.

Kansas City: Demand better; trend firm; supply ample; prime tallow stabilized 5¾@5¾¢ lb.

Chicago: Demand good; trend firm; supply fair; tank, truck or carlots, bleachable fancy tallow $5.50 cwt.; yellow grease $5 cwt.

St. Paul: Demand improved; supply steady; bleachable fancy up from 5¼¢ lb., f.o.b. producer's plant last week to 5¾¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 6¢ lb.; yellow grease 4¾¢ lb.

Atlanta: Demand fair; trend weak; supply ample; stabilized 5¢ lb., f.o.b. Georgia and Alabama producing mills.

BARLEY FEED

Ogden: Supply ample; rolled $45@46; whole barley $40@41.

Philadelphia: Demand slow; supply fair; $46.

New Orleans: Demand slow; trend unchanged; supply adequate; $51@52, sacked.

Boston: Demand poor; supply ample; $49, sacked.

Denver: Demand good; trend firm; supply fair; rolled $2.05 cwt.

Portland: Demand slow; supply ample; trend unchanged; rolled $53, ground $51.

Los Angeles: Demand slow; trend steady; supply adequate; standard rolled $2.90 cwt., standard ground $2.90 cwt., both sacked.

Baltimore: Demand and supply fair; trend steady; $48.50, sacked.

Chicago: Demand and supply fair; trend firm; $38, sacked.

San Francisco: Demand fair; supply ample; rolled $61, ground $60.

Seattle: Demand fair; trend steady; supply good; $46, truck lots.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Chicago: Demand fair; trend steady; supply ample; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S. D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25, net.

Denver: Demand fair; trend slow; supply ample; $22.50, f.o.b. Denver.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply good; $82.50@87.50, sacked.

BLOOD MEAL

New Orleans: Demand slow; supply ample; trend steady; $82.50@85.50, sacked.

Ogden: Supply ample; $90 ton in 100-lb. bags, f.o.b. Ogden.

Louisville: Demand slow; trend steady; supply good; $82.50@87.50, sacked.

Los Angeles: Demand good; trend firm; supply tight; $6, a unit of ammonia, sacked.

Portland: Demand slow; supply ample; trend unchanged; $112.

Omaha: Demand and trend fair; supply ample; 80% $95, Omaha.

Chicago: Demand fair; trend firm; supply ample; 80% protein, 100-lb. bags $120.

San Francisco: Demand fair; supply ample; $6 a unit of ammonia, sacked.

BONE MEAL (STEAMED)

Cincinnati: Demand good; trend strong; supply short; $115, sacked, Cincinnati.

Louisville: Demand slow; trend steady; supply light; $85@90, sacked.

New Orleans: Demand fair; trend easy; supply ample; $85@90, sacked.

Boston: Demand steady; supply light; $105.

Ft. Worth: Demand good; supply extremely light; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Los Angeles: Demand slow; trend unchanged; supply adequate; imported $81, 20-ton lots, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Buffalo: Demand good; trend steady; supply limited; $105, sacked.

Portland: Demand slow; supply ample; trend unchanged; $99.

Chicago: Demand and supply fair; trend higher; 100-lb. bags $102.50.

Denver: Demand fair; trend steady; supply ample; $109, Denver.

Seattle: Demand good; trend firm; supply limited; $90, ex-dock, sacked.

BREWERS DRIED GRAINS

New Orleans: Demand fair; trend easy; supply good; $52@53, sacked.

Boston: Demand fair; supply ample; domestic, 26% $47.50; Canadian, 24% $45; Canadian, 22% $50, sacked.

Louisville: Demand slow; trend weak; supply good; $50, sacked.

Philadelphia: Demand and supply fair; $50.

Cincinnati: Demand poor; trend steady; supply adequate; $45.

Ft. Worth: Demand slow; supply sufficient; 26% protein $57, sacked, March.

Los Angeles: Demand slow; trend unchanged; supply adequate; $50.50.

Buffalo: Demand and supply good; trend steady to lower; $46, Boston.

St. Louis: Demand slow; trend steady; supply adequate; $40.

Chicago: Demand quiet; trend firm; supply fair; $35.

San Francisco: Demand fair; supply ample; $54, sacked.

BREWERS DRIED YEAST

Boston: Demand and supply steady; 10¢ lb.

Cincinnati: Carlots 11¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., sacked.

Louisville: Demand slow; trend firm; supply good; 10@10¾¢ lb., sacked.

Buffalo: Demand fair; trend steady; supply ample; $9.35 cwt.

Portland: Demand good; supply ample; trend unchanged; 3½¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 10¢ lb., 5-ton lots; 11¢ lb., 1-ton lots; 12¢ lb., less than ton lots; all sacked.

Denver: Demand light; trend steady; supply ample; 8¢ lb., f.o.b. Golden, Colo.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12¼¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12¼¢ lb., ton lots.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Omaha: 10½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

BUTTERMILK (CONDENSED)

Boston: Demand and supply steady; 3.95¢ lb.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Ogden: Supply ample; $4.40, 100-lb. drum.

New Orleans: Demand slow; trend unchanged; supply adequate; $4.15@4.25 cwt.

Louisville: Demand dull; trend steady; supply nil; $4.25 cwt., in paper drums, nominal.

Chicago: Demand quiet; trend firm; supply fair; $3.50@3.75 cwt., barrels.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100-lb. lots; 4½¢ lb., 500-lb. lots; both in barrels.

San Francisco: Demand fair; supply good; $4 cwt., drums.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Minneapolis: Fine grind, 50-lb. bags $12.25, 100-lb. bags $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Los Angeles: Demand slow; trend unchanged; supply adequate; flour $10.15, 20-ton cars; meal $11.15, 20-ton cars; both sacked.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

CHARCOAL

Boston: Demand and supply steady; $110.

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

Chicago: Demand fair; trend firm; supply fair; 50-lb. multiwalls $110.

San Francisco: Demand steady; supply ample; $141, sacked.

COCONUT OIL MEAL

Portland: Demand slow; supply ample; trend unchanged; $80.50.

Los Angeles: Demand slow; trend weak; supply adequate; copra cake $85.

San Francisco: Demand good; supply tight; solvent $69.50.

Seattle: Demand fair; trend firm; supply limited; $86, delivered truck, sacked.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply ample; 600 D, 2,250 A 20½¢ lb.; 600 D, 1,500 A 19¢; 300 D, 3,000 A 22¢; 300 D, 1,500 A 18½¢; 300 D, 2,250 A 20¢.

CONDENSED FISH SOLUBLES

Boston: Demand and supply good; 4¾¢ lb.

New Orleans: Demand light; trend easy; supply fair; $42.50@45, f.o.b. Gulf.

Los Angeles: Demand slow; trend unchanged; supply adequate; 2¾¢ lb.

Denver: Demand poor; trend steady; supply ample; dried $132, Denver.

CORN OIL MEAL

Cincinnati: Demand fair; trend lower; supply adequate; $45.

Louisville: Demand slow; trend steady; supply light; $55.45, sacked.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $45.60, meal $56.60.
Atlanta: Feed $49, meal $70.
Birmingham: Feed $47.60, meal $68.60.
Boston: Feed $50.50, meal $71.50.
Chicago: Feed $39, meal $60.
Cleveland: Feed $46.90, meal $67.90.
Denver: Feed $49.20, meal $70.20.
Ft. Worth: Feed $47.70, meal $68.70.
Indianapolis: Feed $44.20, meal $65.20.
Kansas City: Feed $39, meal $60.
Louisville: Feed $45.60, meal $66.60.
New Orleans: Feed $48.90, meal $69.90.
New York: Feed $50.10, meal $71.10.
Norfolk: Feed $49.50, meal $70.50.

COTTONSEED OIL MEAL

Louisville: Demand fair; trend steady; supply normal; old or new process $63, sacked.

Boston: Demand slow; supply spotty; $72@73.

New Orleans: Demand slow; supply ample; trend steady; $72.90@73.30 bulk, $76@77 sacked.

Wichita: Demand fair; supply sufficient; 41% old process $70, sacked.

Philadelphia: Demand slow; supply fair; $70.

Ogden: Supply ample; 41% $70@73.

Cincinnati: Demand poor; trend steady; supply adequate; $63.

Ft. Worth: Demand poor; supply ample; 41% old process $65, f.o.b. truck at mills, Ft. Worth; carlots, solvent 2% fat added $59.60, delivered Ft. Worth; pellets $2 additional; cottonseed hulls $14@15.

Atlanta: Demand fair; trend stronger; supply limited; 41% $59, Georgia; $57, Alabama; $54, Mississippi Valley and Tennessee producing mills.

Seattle: Demand good; trend steady; supply limited; 41% expeller process $85, delivered, truck lots.

Memphis: Demand slow; trend lower; supply plentiful; prime 41% protein, old process $52.50; new process, 41% solvent $51.50.

Kansas City: Demand poor; trend easy; supply adequate; 41% old process $52.50, Memphis; 41% solvent process $51.50@52, Memphis.

Los Angeles: Demand slow; trend unchanged; supply adequate; $71@72.

Chicago: Demand quiet; trend easier; supply good; Memphis: hydraulic $53, solvent $53.

Omaha: Demand slow; trend steady; supply ample; 41% solvent $60.20, delivered Omaha.

St. Louis: Demand slow; trend steady; supply ample; solvent $56.

Buffalo: Demand fair; trend steady; supply ample; $73.50, sacked, Boston.

Portland: Demand slow; supply ample; trend unchanged; $75.

Denver: Demand fair; trend steady; supply ample; 2% $62.40, Denver.

San Francisco: Demand good; supply tight; 41% $71.50, 44% $76.

D ACTIVATED ANIMAL STEROL (POWDERED)

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb. warehouse.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100-lb. multiwall bags, bulk $63.25; truckload $67, sacked, in 100-lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston; 100-lb. multiwall bags $71.35, bulk.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100-lb. multiwall bags, $54.07, bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.02.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truckloads; $96, bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged in carloads or truckloads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $86 net ton in 100-lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100-lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices: for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum calcium 24% $86, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truckload $80.50, sacked, in 100-lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Portland: Demand slow; supply ample; trend unchanged; $112.

Denver: Demand fair; trend slow; supply ample; $95.80, f.o.b. Denver.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

DISTILLERS DRIED GRAINS

Philadelphia: Demand slow; supply light; $63.

Cincinnati: Demand poor; trend steady; supply adequate; by truck, dark $58, light $57.50.

Boston: Demand good; supply light; Canadian $63.

Louisville: Demand fair; trend steady; supply light; bourbon grains: light $59, dark $60, solubles $77, all sacked.

Seattle: Demand fair; trend firm; supply ample; $69, delivered, truck lots, sacked.

Buffalo: Demand fair to good; trend firm; supply ample; $60, Boston.

San Francisco: Demand fair; supply ample; solubles $85, sacked.

DRIED BEET PULP

Boston: Demand slow; supply adequate; domestic $53, Canadian $55, both sacked.

New Orleans: Demand fair; trend steady; supply adequate; $54@55, sacked.
Ogden: Supply good; $41@46.
Ft. Worth: Demand slow; supply sufficient; 50 lb. papers $54, 30 days' shipment, delivered Ft. Worth.
Denver: Demand excellent; trend very strong; supply nil; $32.50, bulk, f.o.b. Colorado factories; $34.50, pellets, f.o.b. Colorado factories.
Portland: Demand good; supply ample; trend unchanged; $56.40.
Seattle: Demand good; trend firm; supply limited; $52, delivered, carlots, sacked.
Atlanta: Demand practically nil; trend steady; supply limited; $58, sacked, delivered.
Buffalo: Demand good; trend higher; supply adequate; $53, sacked, Boston.
Los Angeles: Demand slow; trend unchanged; supply adequate; $47.80@49.40.
San Francisco: Demand good; supply fair; $45.20.

DRIED BUTTERMILK

Boston: Demand good; supply short; 14¢ lb.
Ogden: Supply good; $17.25 cwt.
New Orleans: Demand fair; trend steady; supply ample; $13@13.50 cwt.
Louisville: Demand dull; trend stronger; supply light; 13½@14¢ lb., sacked.
Los Angeles: Demand slow; trend unchanged; supply adequate; 13¢ lb., sacked.
Buffalo: Demand fair; trend steady; supply ample; $13.75 cwt.
Chicago: Demand quiet; trend steady; supply fair; medium acid $12@12.50 cwt., sweet cream $12@12.50 cwt., both sacked.
San Francisco: Demand fair; supply ample; 11½¢ lb., sacked.

DRIED CITRUS PULP

Boston: Demand fair; supply good; $32, sacked, f.o.b. Florida.
New Orleans: Demand fair; trend easy; supply normal; $32.50@35, f.o.b. Florida.
Atlanta: Demand good; trend stronger; supply limited; $32.50@35, sacked, Florida producing plants.
Buffalo: Demand fair; trend higher; supply ample; $30.50, sacked, f.o.b. Florida points.
Los Angeles: Orange pulp, none available; lemon pulp $38, slow demand, weaker trend, none available.
San Francisco: Demand and supply fair; meal $49, sacked.

DRIED SKIM MILK

Boston: Demand active; supply scarce; 13¢ lb., nominal.
Philadelphia: Demand slow; supply light; $12.50 cwt.
Ogden: Supply good; $15.15, 100-lb. drum.
Cincinnati: Demand fair; trend steady; supply adequate; 13@14¢ lb., sacked.
New Orleans: Demand slow; trend unchanged; supply ample; $13.50@14 cwt., sacked.
Louisville: Demand slow; trend steady; supply ample; 13½@14¢ lb., sacked.
Chicago: Demand slow; trend firm; supply fair; $12@12.50 cwt., sacked.
Los Angeles: Demand slow; trend unchanged; supply adequate; 15¢ lb., less than ton lots; 14½¢ lb., ton lots; both sacked.
Portland: Demand slow; supply ample; trend unchanged; 13¢ lb.
Minneapolis: Supplies ample; demand fair to poor; $13.50@13.75 cwt., sacked.
Buffalo: Demand fair; trend steady; supply ample; spray $13.95 cwt.
San Francisco: Demand and supply fair; 13½¢ lb., sacked.

DRIED WHEY

Boston: Demand and supply steady; 5½¢ lb.
Ogden: Supply good; $6, 100-lb. bag, sacked.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.50 cwt., producers' points.
Philadelphia: Demand slow; supply light; $6.50 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; $6 cwt., sacked.
New Orleans: Demand fair; trend easy; supply ample; $6@6.50 cwt., sacked.
Louisville: Demand dull; trend steady; supply normal; 6½¢ lb., sacked.
Wichita: Demand light; supply ample; $6.50 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6, sacked, Ft. Worth; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.
Denver: Demand fair; trend steady; supply ample; $6.50 cwt.
Los Angeles: Demand slow; trend unchanged; supply adequate; $5.93 cwt., carloads, sacked; $6.23 cwt., l.c.l., sacked.
Minneapolis: Demand good; supply ample; price slightly weaker at $5.35@5.45.
Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.
Portland: Demand slow; supply ample; trend unchanged; $5.80 cwt.
Chicago: Demand slow; trend firm; supply fair; $5.75@6 cwt., sacked.
San Francisco: Demand steady; supply good; $5.75 cwt., sacked.

FEATHER MEAL (HYDROLYZED)

Boston: Demand and supply steady; $80, sacked.
Ft. Worth: Demand good; supply extremely scarce; 85% - 87% protein $72.50@75, sacked, f.o.b. trucks, north Texas plants.
Salisbury, Md.: Demand spotty; supply adequate; $84.
Atlanta: Demand fair; trend weak; supply adequate; $78.50, f.o.b. Georgia and Alabama producing points.
Los Angeles: Demand slow; trend unchanged; supply adequate; $1 a unit of protein, sacked.

FISH MEAL

Ogden: Supply good; $1.70 a unit, f.o.b. Coast; 65% $115@117.
Louisville: Demand dull; trend easy; supply light; $145@148, nominal, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $145.
Boston: Demand slow; supply good; $117, sacked.
New Orleans: Demand dull; trend easy; supply ample; menhaden, 60% $108@112, sacked; scrap $101@106, sacked, both f.o.b. Gulf.
Ft. Worth: Demand fair; supply sufficient; 65% protein $110, sacked, delivered Ft. Worth.
Buffalo: Demand just fair; trend steady; supply ample; 60% protein menhaden $125 bulk, $130 sacked.
Los Angeles: Demand slow; trend weaker; supply adequate; local production, 60% protein $1.65@1.70 a unit, sacked.
Omaha: Demand fair; trend firm; supply ample; 60% menhaden $130, f.o.b. Omaha.
Portland: Demand slow; trend lower; supply ample; $1.60 a unit.
Seattle: Demand fair; trend weak; supply good; $1.70 a unit protein, delivered, truck lots, sacked (Canadian production).
Atlanta: Demand fair; trend weak; supply adequate; 60% menhaden $105@110, sacked, Atlantic and Gulf producing ports.
Chicago: Demand slow on eastern menhaden, fair on Gulf menhaden; trend firmer, eastern menhaden, meal $108@112 and scrap $104@108; Gulf menhaden, meal $104@105 and scrap $100@101; Canadian herring meal $1.55@1.75 a unit of protein.
Minneapolis: Some strengthening in prices; Gulf menhaden up $2 to $132@135, sacked, truck lots; 70% herring up from $1.60 to $1.65@1.70 a unit protein, f.o.b. West Coast; 60% blended at $128@130, sacked, delivered Minneapolis.
Denver: Demand fair; trend steady; supply ample; $1.75 a unit of protein, f.o.b. West Coast.
San Francisco: Demand slow; supply ample; $1.70 a unit of protein, sacked.

HAY

Wichita: Demand good; supply insufficient; prairie $23@25; alfalfa $32@34, baled.
Boston: Demand and supply steady; No. 2 timothy $40@42.
Philadelphia: Demand slow; supply light; $24@25.
Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $24@25; alfalfa clover mixed $27.50; No. 1 red clover $26@27; alfalfa, first cutting $32, second cutting $25; wheat or oat straw $15@20.
Ogden: Supply ample; $25 in the barn.
Louisville: Demand dull; trend steady; supply good; No. 1 hay, any variety $30@35, No. 2 $28@30; straw $18@20.
Ft. Worth: Demand fair for alfalfa, very slow for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $40@42, No. 2 $38@40; No. 2 prairie $24@26; No. 2 Johnson grass $22@24, delivered Texas common points.
Denver: Demand and supply fair; trend good; $31, new hay, first cutting; $31@32, new hay, third cutting, alfalfa baled.
Seattle: Demand good; trend easy; supply fair; baled U.S. No. 2 green alfalfa $38, delivered, truck lots.
Los Angeles: Slow demand with adequate offerings; U.S. No. 1 $43@44; U.S. No. 2 leafy $40@41; U.S. No. 2 green $41@42; U.S. No. 2 $37@39.
Portland: Demand slow; trend lower; supply ample; $38@39.

HOMINY FEED

Boston: Demand slow; supply plentiful; $48.
Cincinnati: Demand poor; trend steady; supply adequate; $41.
New Orleans: Demand fair; trend easy; supply ample; $46.50@48.50, sacked.
Louisville: Demand slow; trend steady; supply normal; $48, sacked.
Memphis: Demand poor; trend steady; supply ample; white $44, yellow $44.
Seattle: Demand fair; trend steady; supply limited; $53, delivered, carlots, sacked.
Kansas City: Demand slow; trend steady; supply ample; white $31@32, yellow $32.50@33.
Chicago: Demand slow; trend easier; supply ample; $37.
St. Louis: Demand slow; trend steady; supply ample; yellow $38.
Buffalo: Demand good; trend steady; supply adequate; $47.50, Boston.

LINSEED OIL MEAL

Boston: Demand slow; supply ample; 34% $81.
New Orleans: Demand slow; trend easy; supply ample; $91.40@91.90, bulk; $96@96.50, sacked.
Philadelphia: Demand and supply fair; trend unsettled; 34% $77.50.
Louisville: Demand slow; trend easy; supply normal; old process $84, new process $79, both sacked.
Wichita: Demand fair; supply sufficient; 34% $85.50, sacked.
Cincinnati: Demand poor; trend lower; supply adequate; new process $81, old process $71, Minneapolis.
Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $80, rail, March.
Seattle: Demand fair; trend firm; supply limited; 31% protein (California) $93, delivered carloads, sacked.
Minneapolis: Weaker trend; new process down from $62.50 last week to $59.50@60; old process down from $73, nominal, last week to $70.50.
Portland: Demand slow; supply ample; trend unchanged; $91.
Denver: Demand poor; trend steady; supply fair; $76.30.
Los Angeles: Demand slow; trend unchanged; supply adequate; local production, 31% protein $75.
Kansas City: Demand slow; trend weak; supply plentiful; solvent process $58@58.50; old process $69@70, Minneapolis.
Chicago: Demand slow; trend easier; supply ample; Minneapolis basis, solvent $60; expeller $70.
Omaha: Demand poor; trend easy; supply ample; 34% solvent $65.80; 32% old process $75.80, Omaha.
San Francisco: Demand fair; supply ample; $78.50.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; 65% $150, sacked, Omaha.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $34.
New Orleans: Demand fair; trend easy; supply ample; $43.50@45, sacked.
Boston: Demand and supply limited; $48, sacked.
Chicago: Demand quiet; trend easier; supply adequate; $32.

MEAT AND BONE MEAL

Boston: Demand slow; supply steady; $1.20 a protein unit; converted 50% $72.50.
Ogden: Supply good; $76 ton, 50% protein, 100 lb. bags.
Cincinnati: Demand good; trend strong; supply short; $76, Cincinnati.
New Orleans: Demand slow; trend easy; supply ample; $82.50@87.50, sacked.
Louisville: Demand fair to good; trend steady; supply ample to good; $82.50@87.50, sacked.
Wichita: Demand fair; supply sufficient; 50% $83, sacked, f.o.b. plant; 35%, no quotations, no offerings.
Ft. Worth: Demand good; supply light; meat and bone, 50% $76@77, f.o.b. Ft. Worth.
San Francisco: Demand fair; supply ample; $1.55 a unit of protein.
Seattle: Demand good; trend steady; supply ample; 50% protein $77.50, ex-warehouse, sacked.
Chicago: Demand fair; trend steady; supply ample; 50% protein, 100-lb. bags $80.
Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $70 bulk, $75 sacked.
Portland: Demand slow; trend lower; supply ample; $1.39 a unit.
Los Angeles: Demand slow; trend weaker; supply adequate; 50% protein $1.65 a unit.
Omaha: Demand fair; trend fair; supply ample; $72.50 ton, 100-lb. bags; $75 ton, 50-lb. bags.
St. Paul: Demand fair; supply adequate; price showing strength, $2 higher at top of scale; $68@74.
Kansas City: Demand slow; trend firm; supply ample; 50% $70.
St. Louis: Demand fair; trend steady; supply adequate; $72.
Denver: Demand light; trend steady; supply ample; 50% $67.50, sacked, truck lots; $64.50, bulk.

MILLFEED

Minneapolis: Demand fair; supply adequate; prices generally off some; bran $38.50@39, sacked; middlings $36.50@37, sacked; red dog $40@41.
Kansas City: Demand fair; trend easy; supply ample; sacked, bran $35.50@36, shorts $35.50@36; bulk, bran $30@30.50, shorts $31.50@32, middlings $30.50@31.
Wichita: Demand fair; supply adequate; basis Kansas City: bran $36.50@37, shorts $36.50@37, sacked.
Ft. Worth: Demand good; offerings light for immediate delivery; bran $40.50, burlaps $45; gray shorts $42, burlaps $45@45.50; bulk middlings $41.50, delivered Texas common points.
Chicago: In common with the vast majority of the feeds, millfeed prices came in for some downward readjustments during the past week with both bran and middlings losing $2 of the previous week's recovery. Red dog was down $3 from the Feb. 17 quote. Mill runs increased due to some pickup in foreign flour business under PL 480, and offerings were well in excess of the demand. Draggy call for commercial mixed feed helped to put weight on the constituents. Quotations, Chicago, carlots, bulk, ton: standard bran $35.50, standard midds. $36.50, red dog $40.50.
St. Louis: Demand fair; trend steady; supply ample; sacked, bran $41, shorts $41; bulk, bran $35, shorts $36.50, middlings $36.
Cincinnati: Demand fair; trend higher; supply adequate; bran and middlings $49.
Omaha: Demand fair; trend easy; supply ample; sacked bran $37; sacked gray shorts $37; bulk standard midds. $33; all Omaha basis.
Boston: Demand slow; supply ample; bran and middlings $48@49.
Buffalo: Millfeeds quieted down after a buying flurry early in the week and prices backed down. It was not an aggressive decline but the market was pressed down by Midwest competition. Because of the competition, buyers have adopted a "do nothing today—wait 'till tomorrow" attitude, and in the meantime supplies build up. Mixers' business is slow and some are delaying shipments, mostly in the New England area but some also from New York state. Sacked differential on bran and middlings held unchanged at $6. Bulk and sacked bran and middlings declined $1.50@2. Red dog held steady. Quotations Feb. 24: bulk bran $38.50@39.50, sacked $44.50@45.50; bulk middlings $38.50@40.50, sacked $44.50@46.50; bulk red dog $42@42.50, sacked $45@47.
Philadelphia: Demand spotty; supply fair; bran $47, standard midds. $48, red dog $51.
New Orleans: Demand good; trend easy; supply ample; sacked, bran $43@43.75, shorts $43@43.75; bulk, bran $43@43.75, shorts $44@44.75, middlings $44@44.75.
Memphis: Demand poor; trend steady to lower; supply ample; wheat bran $38.20; gray shorts $39.20; standard midds. $39.20.
Louisville: Demand fair; trend stronger; supply ample; bran $47.80, mixed feed or mill run $48.30, shorts $49.30, all sacked.
Portland: Demand slow; trend lower; supply ample; $34.50.
Ogden: Supply good; to Utah and Idaho: red bran and mill run $34, middlings $39; to Denver: red bran and mill run $41, middlings $46; to California: red bran and mill run $41.50, middlings $46.50, f.o.b. San Francisco and Los Angeles.
Denver: Demand and trend steady; sup-

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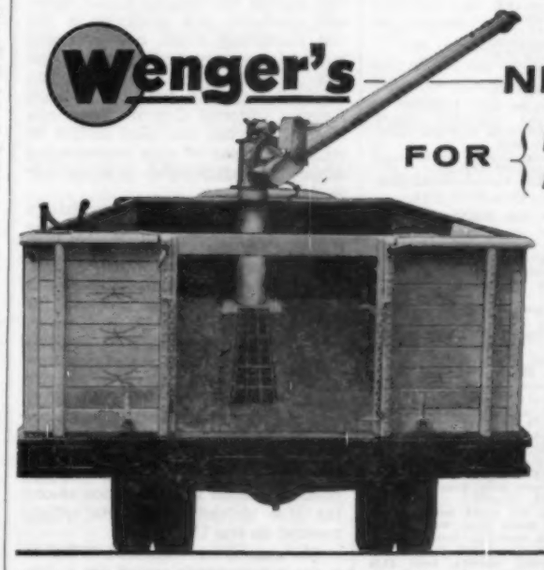
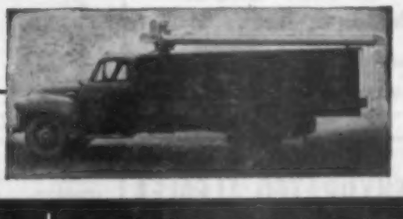


Handle both bagged and bulk feeds, (mash, pellets, crumbles, etc.) and whole grains in a single flat bed truck. Horizontal unloader recessed in floor of truck. Vertical boom is 7 feet high (extra height optional). 14 ft. unloading boom will rotate 360 degrees and may be elevated to 18 ft. above ground level with hydraulic hand pump furnished with unit. Entire unit is power driven from power take off. May be installed in your own shop.



Write for information giving dimensions and make of your truck bodies.

Wenger Mixer Mfg. Co.
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Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

ply adequate; shorts $39.25, bran $39.25, mill run $39.25.

Seattle: Demand fair; trend steady; supply good; $36, delivered common transit points, carlots.

San Francisco: Demand slow; supply ample; millfeed $41.50; red bran $52.50.

Los Angeles: Slow demand; firmer trend; smaller offerings; standard mill run $42.50; red bran $47.50.

MINERAL FEED

Wichita: Demand heavy; supply adequate; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

Ogden: Supply ample; $113 ton in 50-lb. blocks; $103 ton, granular, 50-lb. bags.

Ft. Worth: Demand fair; supply sufficient; all-purpose granules $90, block $97; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50-lb. paper bags).

Denver: Demand fair; trend slow; supply ample; $100.

Portland: Demand slow; supply ample; trend unchanged; $42.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand fair; trend steady; supply good; mixer mineral $45, ex-warehouse, sacked; all-purpose mineral $85, ex-warehouse, sacked.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

MOLASSES

Cincinnati: Demand fair; trend steady; supply adequate; 9¼¢ gal.

New Orleans: Demand good; supply ample; trend steady; 9¾@10¢ gal., tank cars and trucks; 600-lb. customers' drums $6.92.

Boston: Demand active; supply plentiful; 14¢ gal., tank cars.

Louisville: Demand slow; trend easy; supply normal; 9¼¢ gal., tank car lots, Gulf ports.

Ft. Worth: Demand good; supply sufficient; blackstrap 10¢ gal., f.o.b. Houston; delivered Ft. Worth, truck, $23.80 seller's market price on date of shipment.

Denver: Demand fair; trend steady; supply ample; 9¼¢ gal., New Orleans; $15.52 ton, New Orleans; $20 ton, West Coast.

Los Angeles: Demand steady; trend unchanged; supply ample; $20, f.o.b. tank cars; $20.25, f.o.b. tank trucks.

Buffalo: Demand good; trend steady; supply adequate; 14¢ gal., f.o.b. Albany.

St. Louis: Demand slow; trend steady; supply ample; 9½¢ gal., tank car, New Orleans.

Minneapolis: Trend remains steady; price unchanged at $28.50, tank truck, delivered.

Atlanta: Demand fair; trend steady; supply adequate; citrus $15@17, Florida producing plants.

Seattle: Demand fair; trend easy; supply good; $20.25, f.o.b. Seattle, tank truck lots

Kansas City: Demand slow; trend steady; supply ample; blackstrap 9¼@9½¢ gal., f.o.b. tank car, New Orleans.

Memphis: Demand poor to good; trend weak to steady; supply ample; blackstrap 9¼¢ gal., tank car, f.o.b. New Orleans; $25 ton, delivered Memphis, truck.

San Francisco: Demand and supply good; $20, f.o.b. cars, Richmond, Cal.

OAT PRODUCTS

Louisville: Demand slow; trend easy; supply normal; reground $25.80, rolled white oats $84.80, feeding oatmeal $80.30, pulverized white $53.80, crimped white $67.80, all sacked.

Philadelphia: Pulverized whites, demand slow, supply fair, $52; domestic, demand slow, supply light, $33; Canadian oat feed, demand slow, supply light, $34, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; reground oats $29; pulverized white oats $45.

Ft. Worth: Demand slow; supply moderate; oat millfeed $50.70; reground $33.70, March, sacked, new jutes.

Los Angeles: Demand slow; trend unchanged; supply limited; local production, pulverized $59, sacked.

Minneapolis: Some pick up in demand; prices holding steady; feeding rolled at $79; feeding oatmeal $67.50; pulverized $46.50; reground oat feed $26; crimped at $61, all sacked prices.

Seattle: Demand good; trend firm; supply fair; $56, delivered, truck lots, 38-lb. or better.

Chicago: Demand slow; trend easier; supply ample; reground oat feed $17.50; No. 1 fine ground feeding oatmeal $75; feeding rolled oats $74.75@79.50.

Memphis: Demand poor; trend lower; supply ample; 3½% protein, reground oat feed $26.75.

Portland: Demand slow; supply ample; trend unchanged; rolled $60, ground $62, cleaned $60.

OYSTER SHELL

Boston: Demand and supply steady; $26, paper.

Cincinnati: Demand fair; trend steady; supply adequate; $24.45, sacked.

New Orleans: Demand good; supply good; trend steady; $24@24.50, papers.

Louisville: Demand and supply good; trend firm; in 80-lb. paper sacks $23.45; in 50-lb. paper sacks $23.70; in 25-lb. paper sacks $25.95.

Los Angeles: Demand slow; trend unchanged; supply ample; $14.80.

Portland: Demand good; supply ample; trend unchanged; $42.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand fair; trend steady; supply good; mixer mineral $45, ex-warehouse, sacked; all-purpose mineral $85, ex-warehouse, sacked.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

MOLASSES

Cincinnati: Demand fair; trend steady; supply adequate; 9¼¢ gal.

New Orleans: Demand good; supply ample; trend steady; 9¾@10¢ gal., tank cars and trucks; 600-lb. customers' drums $6.92.

Boston: Demand active; supply plentiful; 14¢ gal., tank cars.

Louisville: Demand slow; trend easy; supply normal; 9¼¢ gal., tank car lots, Gulf ports.

Ft. Worth: Demand good; supply sufficient; blackstrap 10¢ gal., f.o.b. Houston; delivered Ft. Worth, truck, $23.80 seller's market price on date of shipment.

Denver: Demand fair; trend steady; supply ample; 9¼¢ gal., New Orleans; $15.52 ton, New Orleans; $20 ton, West Coast.

Los Angeles: Demand steady; trend unchanged; supply ample; $20, f.o.b. tank cars; $20.25, f.o.b. tank trucks.

Buffalo: Demand good; trend steady; supply adequate; 14¢ gal., f.o.b. Albany.

St. Louis: Demand slow; trend steady; supply ample; 9½¢ gal., tank car, New Orleans.

Minneapolis: Trend remains steady; price unchanged at $28.50, tank truck, delivered.

Atlanta: Demand fair; trend steady; supply adequate; citrus $15@17, Florida producing plants.

Seattle: Demand fair; trend easy; supply good; $20.25, f.o.b. Seattle, tank truck lots

Kansas City: Demand slow; trend steady; supply ample; blackstrap 9¼@9½¢ gal., f.o.b. tank car, New Orleans.

Memphis: Demand poor to good; trend weak to steady; supply ample; blackstrap 9¼¢ gal., tank car, f.o.b. New Orleans; $25 ton, delivered Memphis, truck.

San Francisco: Demand and supply good; $20, f.o.b. cars, Richmond, Cal.

OAT PRODUCTS

Louisville: Demand slow; trend easy; supply normal; reground $25.80, rolled white oats $84.80, feeding oatmeal $80.30, pulverized white $53.80, crimped white $67.80, all sacked.

Philadelphia: Pulverized whites, demand slow, supply fair, $52; domestic, demand slow, supply light, $33; Canadian oat feed, demand slow, supply light, $34, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; reground oats $29; pulverized white oats $45.

Ft. Worth: Demand slow; supply moderate; oat millfeed $50.70; reground $33.70, March, sacked, new jutes.

Los Angeles: Demand slow; trend unchanged; supply limited; local production, pulverized $59, sacked.

Minneapolis: Some pick up in demand; prices holding steady; feeding rolled at $79; feeding oatmeal $67.50; pulverized $46.50; reground oat feed $26; crimped at $61, all sacked prices.

Seattle: Demand good; trend firm; supply fair; $56, delivered, truck lots, 38-lb. or better.

Chicago: Demand slow; trend easier; supply ample; reground oat feed $17.50; No. 1 fine ground feeding oatmeal $75; feeding rolled oats $74.75@79.50.

Memphis: Demand poor; trend lower; supply ample; 3½% protein, reground oat feed $26.75.

Portland: Demand slow; supply ample; trend unchanged; rolled $60, ground $62, cleaned $60.

OYSTER SHELL

Boston: Demand and supply steady; $26, paper.

Cincinnati: Demand fair; trend steady; supply adequate; $24.45, sacked.

New Orleans: Demand good; supply good; trend steady; $24@24.50, papers.

Louisville: Demand and supply good; trend firm; in 80-lb. paper sacks $23.45; in 50-lb. paper sacks $23.70; in 25-lb. paper sacks $25.95.

Los Angeles: Demand slow; trend unchanged; supply ample; $14.80.

Portland: Demand good; supply ample; trend unchanged; $42.

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trend unchanged; western $31, eastern $36, granite grits $25, shell flour $21.

Seattle: Demand and trend steady; supply good; eastern $36, delivered carlots, sacked.

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

PEANUT OIL MEAL

Atlanta: Demand fair; trend weak; supply limited; 45% $59, expeller process; $54, solvent extracted, f.o.b. Georgia and Alabama producing mills.

PEAT MOSS

Philadelphia: Demand slow; supply fair; $2.99 bale, f.o.b. pier.

Cincinnati: Demand and supply good; truck lots $3.45 bale, f.o.b. Cincinnati.

Boston: Demand and supply steady; carlots $3.15 bale.

Seattle: Demand and supply good; trend firm; $2.85 a bale, delivered truck lots.

Portland: Demand good; supply ample; trend unchanged; $3.30 a bale.

Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.

Los Angeles: Demand steady; trend unchanged; supply ample; Canadian 5.6 cu. ft. bales $3.65.

San Francisco: Demand and supply fair; $3.65 a bale.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI, 10% stearate or carbonate mixture, 100 lb. drums $1.32 lb.; 200 lb. and up $1.30 lb., all delivered.

POULTRY BY-PRODUCTS

Boston: Demand fair; supply spotty; $69, f.o.b. shipping points.

Ft. Worth: Demand good; supply sufficient; 55% protein $82.50@85, sacked, f.o..b north Texas plants.

Atlanta: Demand fair; trend weak; supply adequate; meal $79, f.o.b. Georgia and Alabama producing points.

Salisbury, Md.: Demand good; supply limited; meal $85.

Los Angeles: Demand slow; trend weaker; supply adequate; $1.45 a unit of protein.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram, in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand slow; supply moderate; rice bran $31, f.o.b. south Texas rice mills; hulls $3.50, sacked, f.o.b. mills.

Los Angeles: Demand slow; trend unchanged; supply adequate; California production, high fat content, bran $52, sacked.

Atlanta: Demand fair; trend weak; supply good; bran $41, sacked, delivered.

San Francisco: Demand good; supply ample; bran $45, polished $49, both sacked.

SCREENINGS

Cincinnati: Demand good; trend steady; supply adequate; unground screenings $25@27, delivered, Cincinnati.

Ft. Worth: Demand good; supply limited; ground mixed grain $28.50@29.50.

Minneapolis: Supply very tight; demand not brisk; Canadian off another $1 to $26, Duluth; domestic ranges unchanged; lights $13@23, mediums $24@33, heavies $34@43.

Chicago: Demand quiet; trend irregular; supply fair; ground grain screenings $37.50; Canadian $32.

Buffalo: Demand and supply fair; trend steady; ground, sacked $43.50, New York; unground, bulk $34.50, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

(Sacked)

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.36.
Kansas City: $24.85@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ogden: Supply ample; milo $42@43.

Ft. Worth: Demand improved; supply sufficient; No. 2 yellow milo $1.98@2, delivered Texas common points.

Seattle: Demand and supply good; trend steady; milo $46, delivered carlots.

Los Angeles: Demand slower; trend easier; supply adequate; milo $3.10 cwt.

SOYBEAN OIL MEAL

Wichita: Demand good; supply sufficient; 44% $66, 50% $72, sacked; 44% $63, 50% $69, bulk, f.o.b. Wichita.

New Orleans: Demand slow; trend easy; supply ample; bulk $73.70@75.20; sacked $77.75@78.25.

Boston: Demand slow; supply ample; 44% $62, 50% $68.

San Francisco: Demand fair; supply ample; $77.40.

St. Louis: Demand slow; trend steady; supply ample; 44% $59.

Minneapolis: Demand remains quiet; 44% holding steady at $48, Decatur.

Los Angeles: Demand slow; trend firmer; smaller offerings; $76.40@77.40.

Portland: Demand slow; trend lower; supply ample; $48.50, f.o.b. Decatur.

Omaha: Demand slow; trend steady; supply tight; 44% $56.60, delivered Omaha.

Denver: Demand very poor; trend weaker; supply ample; $65.50, Denver.

Chicago: Soybean oil meal prices were unchanged from a week ago, with prices a little easier in a spot or two. Nearby meal seemed to be acting a bit tight. Quotations, Decatur, bulk, carlots, ton: 44% protein, unrestricted billing $56.50 and eastern restricted $52@52.50; 50% protein, unrestricted billing $61.50 and eastern restricted $57.

Memphis: Demand poor; trend lower; supply heavy; prime 44% solvent $57, f.o.b. Memphis.

Kansas City: Demand poor; trend steady; supply ample for spot; 44% solvent process $52@52.50, Decatur.

Philadelphia: Demand and supply fair; 44% $53, Decatur.

Ogden: Supply good; 44% protein $79 @80.

Cincinnati: Demand poor; trend steady; supply adequate; $56, Decatur.

Louisville: Demand slow; trend strong; supply good; $66.70, sacked.

Ft. Worth: Demand fair; supply sufficient; 44% $64.70 March, $66 April-July; 50% protein $70.70 March, $72.90 April-July; trucks: 44% $66.50@67.50, 50% protein $72.50@73.50.

Atlanta: Demand fair; trend steady; supply good; 44% $67.20, delivered.

Seattle: Demand good; trend weak; supply ample; $77, delivered carlots.

TANKAGE

St. Paul: Demand fair; supply adequate; price up at top end from $68@72 last week to $68@74.

Kansas City: Demand slow; trend firm; supply ample; 60% digester $70.

Chicago: Demand and supply fair; trend higher; 60% protein, 100-lb. bags $80.

St. Louis: Demand fair; trend steady; supply adequate; $72.

Omaha: Demand good; trend firm; supply short; 100-lb. bags $72.50; 50-lb. bags $75.

Louisville: Demand fair; trend steady; supply good; 60% $82.50@87.50, sacked.

New Orleans: Demand dull; trend steady; supply good; 60%, bulk $80.50@82, sacked $83@83.50.

Ft. Worth: Demand fair; supply moderate; 60% digester $82, Ft. Worth.

Cincinnati: Demand fair; trend steady; supply ample; 60% digester $78, Cincinnati.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand extremely good; supply light; 4¾¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55, freight allowed to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend easy; supply ample; $64@66, cottons.

Minneapolis: Demand good; supply tight; steady at $54, jutes.

PENB

(Continued from page 1)

Wodicka, Food & Container Institute; Dr. L. E. Dawson, Michigan State University; Mr. Hendrickson.

3. Instant frozen French toast—Dr. L. B. Darrah, Cornell University; Mr. Hendrickson.

4. Eggnog — Lloyd H. Geil and PENB staff in cooperation with the dairy industry to develop year-round promotion.

5. Hard-cooked eggs and Easter eggs—Karl Koonz, Swift & Co.; O. A. Hanke, Watt Publishing Co. (To investigate methods available for volume hard egg cookery and the equipment essential for these methods.)

In all these assignments, Mr. Hendrickson urged committee members to work closely with the PENB staff. Progress reports on each product were requested by Mr. Hendrickson by April 11, when the steering committee will meet in Chicago at the La Salle Hotel prior to PENB's annual meeting April 12-13.

The committee is planning an exhibit of new products at the annual meeting, in charge of Dr. Stadelman. The exhibit will display brand name new products, new products in the test marketing stage, new products in the laboratory testing stage and new products only in the idea or "dream" stage. In addition, Ralston Hannas, editorial director, American Poultry Journal, has been invited to set up a display of eggs representing as many different kinds as is possible to assemble.

Another phase of the committee's session dealt with a report from the U.S. poultry research and marketing advisory committee to which the new products development committee has recommended research projects for its programs in 1960. W. E. Hauver, Jr., poultry division, U.S. Department of Agriculture, stated the new products committee's report was favorably received and that the poultry research and marketing advisory committee had ranked the committee's recommendations for new poultry product research, basic and applied, as second in importance among the nine utilization projects recommended to the USDA.

The committee requested PENB to make a nationwide search for a simple method to peel hard cooked eggs in volume.

W. D. McKENZI DIES

FT. LAUDERDALE, FLA.—William D. McKenzi, 87, former vice president and general counsel for Quaker Oats Co., died here.

GFDNA

(Continued from page 1)

will be an open discussion of feed industry problems.

Simultaneously with this session, members of the various committees will meet.

A business session will open the Tuesday morning general session. Another business session will follow a panel discussion of "Wheat Producers-Grain Trade Coordination." On the panel, moderated by Lloyd Case, Burdick Grain Co., Minneapolis, will be Clifford Hope, president, Great Plains Wheat Market Development Assn.; A. Price Feuquay, Feuquay Elevators, Enid, Okla.; Floyd Roberts, past president, National Wheat Producers Assn., Wasco, Ore., and Loren Johnson, Continental Grain Co., New York.

A special session of the National Country Elevator Committee will be held in the afternoon. A panel will discuss a "Country-Terminal Progress Report on the Uniform Grain Storage Agreement Contract."

Pete Stallcop, secretary, Northwest Country Elevator Assn., will head up this group with the following participants: Leland C. Miller, chairman, National Country Elevator Committee; Frank A. Theis, president, Terminal Elevator Operators Assn.; R. C. Woodworth, vice president, Cargill, Inc., and S. Dean Evans, Evans Grain Co. All four men are members of the negotiating committee.

Several major entertainment features are scheduled for the convention. A directors' dinner will be held March 6 at 7:30 p.m., followed by a free music concert featuring the Kansas City University choir. The annual banquet and floor show will be presented at 7 p.m., March 7.

ABBOTT

(Continued from page 8)

Abbott and the FDA that arsanilic acid and sodium arsanilate are generally recognized as safe for their intended use in animal feeds. It should be noted that in the official publications of the Association of American Feed Control Officials for the years 1958 and 1959, arsanilic acid and sodium arsanilate are listed by the veterinary medical director of FDA as 'old drugs.' By definition, an 'old drug' is one which is generally recognized as safe for its intended use.

"Menadione sodium bisulfite is in the same class. We have been marketing this product as Klotogen F with the knowledge of FDA as an 'old drug'. It is also recognized as an 'old drug' by the veterinary medical director of FDA in the publication of the Association of American Feed Control Officials.

"Automatically Exempt"

"Because of this, the FDA should not take any exception to the continued marketing of arsanilic acid, sodium arsanilate and menadione sodium bisulfite after March 6, 1960. We do not know of any data which would justify changing the status of these products. So long as they remain generally recognized as safe for their intended use, they are automatically exempt from the food additives amendment.

"We are confident these products will continue to play an important role in the agricultural feeding program in this country—and are equally confident they deserve important consideration for the development of your own 1960 poultry and swine feeding programs."

H. E. CONKLIN DIES

BINGHAMTON, N.Y.—Horace E. Conklin, 90, former operator of E. W. Conklin & Son Seed & Feed Co., died recently.

OHIO

(Continued from page 1)

of the Ohio association, Carl Pitstick, Early Elevators, Inc., Waynesville, was chosen first vice president, and Richard E. Shirack, Delphos, was elected second vice president.

James Kile, Fred Kile & Son, Inc., Kileville, was reelected treasurer, and George J. Forrester, Forrester Grain Co., Toledo, was reelected corporation secretary. George G. Greenleaf, Worthington, was renamed executive secretary.

The following were elected to the board of trustees: Vincent Kahle, Luckey; Mr. Kile; Mr. Shirack; Wilbur Clemons, Ney, and Robert Graber, Canton.

Research Suggestion

Dr. Roy M. Kottman, now dean of agriculture, West Virginia University, and to become dean of agriculture, Ohio State University, and director, Ohio Agricultural Experiment Station, suggested that members of the Ohio Grain & Feed Dealers Assn., either singly or as an association, might be interested in financing in whole, or in part, research studies which ultimately would help provide answers and solutions to questions and problems peculiar to their operations.

"Perhaps there is interest among your membership for underwriting one or two graduate assistantships each year at, say $2,000 each; or you might be interested in providing research grants of from $2,000 to $10,000, depending on the nature of the problems which you believe are of urgent significance to you and the time and effort that would be required to find answers to them."

In addition to his concern about research of benefit to the feed and grain industries, Dr. Kottman said he was "equally concerned about the kind of people who will be available for you folks to hire during the years ahead." The reason for his concern, he said, stems from that fact that the nation's colleges of agriculture "have not been getting either the number or the academic quality of students which will be necessary if our agriculturally oriented businesses and industries are to compete successfully in the kind of economic world which will face us in the future."

He added, "The fact that we are graduating fewer numbers from our colleges of agriculture with each successive year means that many positions in agricultural business and industry, in agricultural services and in agricultural education are being filled by people who are somewhat less than well qualified for their jobs.

"Declining enrollments and our apparent inability to attract our share of the more capable students would seem to indicate that agriculture is a declining industry. This obviously is not the case. All we have to do is to note what has happened to population during the past 15 years and then look ahead to the next 10 years, when it is predicted that there will be 33 million more people in the U.S. . . . Our enrollment in agricultural colleges should be increasing markedly."

Student Recruiting Needed

Dr. Kottman commented that when the "tremendous scope" of activities represented by agribusiness are considered, "it becomes painfully obvious that the problem of declining enrollments in agriculture does not lie with the demand for employees in agribusiness, but rather with our methods of appealing to prospective students and their parents, with our programs of education in agriculture, with the relationships that we have with agribusiness firms . . . "

He said it is important in communicating with the general public to differentiate between "farming" and "agriculture." He said two of three persons engaged in agriculture in 1960 live in cities and towns.

Dr. Kottman urged members of the Ohio group to help in the "big job of recruiting" by providing scholarships for undergraduates and research assistantships for graduate students working in areas of interest to the organization.

Resolutions passed at the convention showed that the Ohio association is in favor of:

1. The Ohio Department of Agriculture being restored to the rotary fund system of financing, "thereby restoring the incentive for economy and efficiency and thus maintaining the high standards of the department."

2. Accelerating Ohio State University's plans to promote and develop educational programs for the benefit of the grain and feed trade.

3. Supporting agencies seeking to develop new outlets for farm commodities as one means for the reduction and economical use of surplus crops.

4. Encouraging activities of the U.S. Fish & Wildlife Service's branch of predator and rodent control in the area of cleaning up the rodent problem of concern to grain handlers and processors.

5. Encouraging the assistance of other segments of agriculture in the information and education of farmers in grain sanitation practices.

6. Having depreciation rates pertaining to machinery and equipment installed and used by grain elevators and feed mills reviewed and adjusted to equalize the depreciation to or with the present day life of modern high-speed equipment "which is necessary to operate our line of business efficiently and to the best interest of our citizens."

The Ohio group believes also that a fair and equitable system should be worked so that evidence can be heard, studied and reviewed by "a competent board of experts" before the government reverses or changes a previous ruling on the use of insecticides, fungicides, herbicides, vitamins, drug products and additives.

In another resolution, association members protested the "unfavorable publicity given the grain trade, in general, by certain political aspirants" and established a stand of being against any lowering of storage rates at this time.

in keeping up with technical improvements and other developments in the industry and hence need some form of training in the field. He mentioned educational clinics on employer-employee relations as a move in this direction and said the first clinic to be promoted by the association has been scheduled for June in Columbus.

On the question of a better credit system for grain and feed dealers, Mr. Moorhead said that as farms get bigger it takes more capital to operate them. "We seem to have been running up against a stone wall as far as credit is concerned," Mr. Moorhead said, but he predicted a breakthrough may soon be achieved.

He said the main credit problem lies in the inability of small-town banks to make loans large enough for farmers. A possible solution may be for larger city banks to open branches in the rural areas, he added.

In addition to Mr. Moorhead being elected to a second term as president

USDA

(Continued from page 1)

boost prices would stimulate or retain in production of poultry and eggs those producers whose costs have risen out of line with other producers.

One may conclude that the current hearings are immediately interesting but that they add little to the sum total of human knowledge, and there is little probability that these hearings will result in any favorable report on the bills now pending before the Senate or the House agricultural committees.

It all makes for local political silage and little more, observers here feel.

FTC Case Against Diamond Salt Settled

ST. CLAIR, MICH. — Proceedings on the Federal Trade Commission's complaint—begun in December, 1958—that Diamond Crystal Salt Co., St. Clair, violated the anti-merger section of the Clayton Act by its purchase of Jefferson Island (La.) Salt Co. have been terminated by the company's agreement to a consent order, Charles F. Moore, Diamond Crystal president, announced this week.

Under terms of the agreement, Diamond Crystal retains the entire Jefferson Island rock and evaporated salt facilities in Louisiana—subject to certain controls spelled out in the agreement—but will offer for sale non-producing property on Seneca Lake, N.Y., which it acquired as part of the purchase of Jefferson Island.

"Since the intent of this consent agreement is to foster competition—which was our main purpose in acquiring Jefferson Island in the first place—we are glad to cooperate in carrying out these provisions," said Mr. Moore.

"The controlling stipulations in no way affect the company's market position or future growth potentials," he added.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
December 19	1,812	404	664	571	101	644	1,840	2,170
December 26	930	388	663	637	75	611	1,530	2,140
January 2	1,093	380	913	664	102	657	1,818	2,335
January 9	1,116	451	946	809	130	745	1,940	2,428
January 16	1,045	424	663	722	100	848	2,049	2,230
January 23	1,054	357	656	665	94	885	1,884	2,245
January 30	1,076	418	666	749	117	715	1,980	2,300
February 6	1,035	422	805	787	120	822	1,925	2,261
February 13	1,063	474	805	776	106	694	1,986	2,184
February 20	1,079	415	784	802	131	742	1,987	2,024

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
December 19	987	368	2,597	324	5,642	198	2,770	1,996
December 26	610	346	2,276	299	4,924	165	2,641	1,843
January 2	1,112	440	2,956	365	5,983	190	2,862	2,267
January 9	1,034	436	2,866	361	6,181	234	3,019	2,160
January 16	1,086	471	2,847	321	6,319	200	3,153	2,207
January 23	1,123	539	2,787	338	6,456	209	3,277	2,149
January 30	1,128	500	2,823	349	6,765	172	3,288	2,420
February 6	1,114	560	2,923	396	6,799	182	3,464	2,352
February 13	1,220	470	3,074	381	7,019	183	3,365	2,482
February 20	1,334	518	3,030	450	6,789	183	3,704	2,448

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959-60	Total 22 areas 1958-59
December 19	3,021	319	1,748	281	188	1,042	28,911	30,579
December 26	2,770	235	1,409	229	158	1,011	25,789	29,019
January 2	3,334	355	1,759	287	255	1,046	31,173	31,704
January 9	3,261	425	2,043	355	233	1,152	32,325	30,827
January 16	3,450	428	2,173	320	254	1,033	32,303	29,761
January 23	3,484	372	2,112	311	260	1,151	32,408	30,661
January 30	3,578	383	2,175	378	239	973	33,184	31,343
February 6	3,617	401	2,329	407	249	1,119	34,089	31,837
February 13	3,874	364	2,333	385	207	1,131	34,576	32,970
February 20	3,907	391	2,290	302	256	1,117	34,583	33,471

PACIFIC N. W.

(Continued from page 6)

advantages of pellets in feeding and then observed that "pelleting's greatest friend benefitwise is lowest quality roughage. But to be a satisfactory feed, this low quality roughage will have to be complemented by other high energy feeds. I do not mean that pelleting the lowest quality roughage would necessarily be the most desirable from the economic standpoint."

OPERATING A PELLET MILL— It is not possible, because of the variables involved, to give one set of rules for pelleting operations, but several aspects of the operation of a pellet mill were discussed by Rex A. Wagner, Sprout, Waldron & Co. representative at Arcadia, Cal.

Mr. Wagner first outlined some general suggestions relating to mechanical adjustment, such as: (1) Importance of proper distribution of feed across the face of the die—use of spreaders or plows can be beneficial on some materials. (2) In certain machine designs, die speed can be altered to advantage—generally, for small diameter pellets, speed should be increased with an increase in horsepower. (3) Periodic checking and setting of rolls. (4) One cause of thumping in a mill may be dies and rolls that are out of round. (5) Renew seals in roller assemblies as often as experience dictates. (6) For successful roller maintenance, a grease purge every 4-8 hours is common practice. (7) As main bearings wear, there must be an adjustment to take up clearance and permit the die to run true with rolls. (8) Die to die housing fit is important. (9) Watch knife adjustment. (10) Use size of shear pin made by the manufacturer and install correctly.

Mr. Wagner covered several points relating to die selection, design and care. For example, he mentioned that to increase thickness of a die, or to lengthen the bore, generally means to increase pellet hardness. When hole diameter is changed, die thickness is changed in order to obtain the same thickness-hole ratio. Mr. Wagner also discussed the problem of die corrosion and said that where this is a problem, results are "almost amazing" through use of a special non-corrosive alloy. He also cited a case in fat use, showing the need for flushing a die with an absorptive material, such as oats, mixed with a lubricating oil, after a run and prior to an extended shutdown.

To help improve die life, Mr. Wagner suggested keeping die tonnage records and consulting with the manufacturer.

Roller shell selection is more important than many operators realize, he said. Too rough a surface has been detrimental on specific mixes. New shell surface designs should help improve performance.

Adding Fat

Mr. Wagner went on to say that adding more than 2% fat in feeds to be pelleted can result in soft pellets and more fines. Thicker dies may help, and finer grinding has a beneficial effect. However, where added fat is over 2%, the best procedure is to add the liquid to the cooled pellets. After the fat is sprayed on the pellets, the mix is tumbled for a short time to allow penetration.

Commenting on roughage pelleting, Mr. Wagner said many attempts at extremely coarse pelleting have been abandoned in favor of a finer grind to the pellet mill. Ground hay with fibers as long as ⅝ to ¾ in. can be handled comparatively well. It has been noted that seasons will have their effect on roughages and pelletability. A ⅝ in. by 1½ in. thick die may work in dry summers, where a ½ by 2½ in. is necessary in damp weather.

"Molasses added at the mill to high-fiber, low-moisture roughage can cause pellets to swell and crack,"

Mr. Wagner said. "The same material but in the form of a tempered mix, with the molasses added 4-12 hours prior to pelleting, produced a higher quality pellet. On the other hand, molasses added at the mill to a dairy concentrate formula without roughage was more beneficial than molasses added to the mix four hours prior to pelleting. . . . However, understand that many of these examples apply only to mixes in certain areas and cannot be accepted as universally true."

Mr. Wagner also described an automatic pelleting operation which includes a control to hold the main drive motor at full horsepower and a control to maintain a preset temperature level.

Referring to pelleting capacity, he said many operators are getting 200 lb. per horsepower-hour on high density feeds, and are content with 100 lb. per horsepower-hour on high-fiber feeds. An intermediate classification also exists.

Increasing Productivity

Mr. Wagner outlined a number of ways to increase productivity of the pelleting system. These included: Increasing horsepower of the mill; being sure that metal is completely removed from the feed; use of an optimum grind, everything through 7 mesh; use of steam to best advantage, with 5-6% of mill capacity added at the conditioner in the form of steam; best possible formulation. He also made suggestions regarding cooling and crumblizing to help improve over-all capacity.

PELLET COOLING, CRUMBLING AND SCALPING—Pellet cooling was the main subject of a talk by Paul J. Husting, assistant general sales manager, California Pellet Mill Co., Crawfordsville, Ind. He also touched upon crumbling and scalping. In this connection, he mentioned that "plenty of mills leave the fines in with the crumble because they have found in analyzing their fines a larger proportion of one ingredient than another. They feel, then, that by leaving the fines in, they are not unbalancing the ration." Mr. Husting said that many mills, especially the larger ones, use sifters instead of the more common shaker for scalping. But, he added, the relatively high initial cost plus the objection voiced by many that additional fines are produced by the fairly violent sifting action make shakers far more widely used.

Mr. Husting went on to discuss design and operation of horizontal and vertical coolers. He said there is a "definite place for each, and we manufacture both types," but "I have seen too many operations cobbled up by a horizontal cooler where there was no more need for one in the installation than for a cigar making machine.

"When it comes to the question of whether or not to install a horizontal cooler," he said, "only two considerations need enter into the decision. First, are you going to be putting more than 15% molasses into your product? If you are, then consider no further; make your plans for the horizontal. But if 15% is the limit, then investigate the second consideration. Do you have the height or can it be readily made available to install a vertical cooler? If you are not going over 15% and do have height for a vertical, then by all means put in a vertical. The popular impression that you cannot successfully cool large pellets in a vertical cooler is pure fallacy. It will do every bit as good a job as a horizontal providing it is sized for the job."

Mr. Husting listed several reasons why he said he prefers a vertical cooler for other than high molasses pellets. He said the moving driven belt in a horizontal "is a troublesome and complicated device . . . initial cost for equal cooling capacity is about 75% greater with a horizontal . . . operating cost is higher because a horizontal cooler is not as efficient . . . maintaining an even distribution of the product on the belt is difficult . . . handling the fines is definitely a problem . . . size is a handicap . . . a greater problem from a contamination viewpoint.

"No cooler, regardless of its rated capacity, will work unless sound principles of installation are followed . . . get hold of the manufacturer of the cooler and insist that he approve the installation or the changes you contemplate making. Then if you wind up with hot pellets or moist pellets, you can lay it in his lap. Mate the cooler to the pellet mill. Don't try to shortcut the cooler, for if you do, you most certainly will be operating your equipment at less than capacity."

PRODUCTION IS THE TOPIC—Talking things over during the Pacific Northwest Feed Mill Production School in Yakima, Wash., are these speakers and students. In the first photo, left to right, are Forrest Larson, Larson & Baardson, Inc., Portland, coordinator of group discussions; L. E. Thompson, Reid-Strutt, Inc., Portland, a speaker, and Willard Salmon Pacific Power & Light Co., Portland, also a speaker. In the second picture are Pat Driscol, Albers Milling Co., Portland, a speaker; Jack Conlee, Osborne-McMillan Elevator Co., Minneapolis, and Winslow Hall, Pacific Molasses Co., San Francisco.

FACTORS IN CONTROL OF FINES IN HANDLING AND STORAGE AND RELATED BIN DESIGN—Art W. Stegner, bulk storage products manager, Butler Mfg. Co., Kansas City, presented two talks—one on pellet handling tests and one on bin design with particular emphasis on pellet storage.

Mr. Stegner described the results of a Butler test of damage to pellets by mechanical handling systems and in so doing offered some suggestions on ways to help reduce damage. For example, feeding the up side of a leg resulted in far less fines than feeding the down side. Also an elevator belt speed of 215 ft. per minute increased fines greatly as compared with a speed of 132 ft. per minute.

Another test showed that in a fall from an overhead auger, more fines are created when pellets fall to a side draw-off tank (where pellets hit steel) than to a center draw-off tank. It was shown, too, that more fines are created when spouting from an elevator leg to a tank at an angle than a direct fall from an overhead auger.

A test with a 6 in. diameter internal auger on a center draw-off tank showed that more fines are created when the auger is at a 45° position than at a 0° position, and that more fines are created at a speed of 700 rpm than at a speed of 475 rpm. People want capacity in handling equipment, Mr. Stegner observed, but damage is much greater when speeds are high.

A test with a slider belt conveyor indicated that the damage which occurred happened upon impact on the belt, not in conveying.

Mr. Stegner also presented information indicating that average pellet damage in bags is not much less than the cumulative total damage of several types of material handling systems using feed in bulk. Handling of pellets in sacks also creates fines, it was pointed out.

Mr. Stegner described a method of testing pellet hardness, using a roller-tumbler device, and he presented data which can be used by a feed firm in checking its own pellets. By using the data and by using a laboratory test unit similar to the one Butler used, a feed man could determine damage to various sizes and types of his own pellets in different types of handling equipment.

As part of his remarks on this subject, Mr. Stegner strongly urged the feed men to work for standard pellet hardness tests that could be used throughout the industry.

Bin Design

In his discussion of bin design, he covered three categories—bins designed to prevent bridging of mash ingredients; bins designed to dissipate bridging of mash, and bins designed for minimum pellet breakage and condensation.

Basically, said Mr. Stegner, bins of small diameters (such as 6 ft. and 9 ft.) are considered more "flowable" than larger diameter tanks. This is due to the reduced lateral pressures exerted on material in the smaller bin; the product has less tendency to pack. Also, less height is helpful.

Anti-Bridging Type Tanks—Design features used to prevent bridging include: Sloping shelves or baffles placed on the inside tank walls; use of corrugated steel for sidewalls of tanks, which simulates baffle type construction; plates or discs suspended to various elevations on rods or cables; horizontal tie rods and girts as sometimes used in square tanks are a compaction preventive; a tank with a live-bottom type discharge.

Regarding hoppers, Mr. Stegner said it is an accepted fact that the center discharge should not be used for mash ingredients. He said round bins with offset hoppers having one side extended straight down from the tank wall have been the most satisfactory. Offset from center discharge hoppers in square and rectangular bins have good flow characteristics, particularly when the slopes of the hopper sides are at different angles and a minimum slope of 60° is maintained.

Hoppers with offsets or steps will reduce the compaction at the outlet and improve flow.

Bridge Breakers—Mr. Stegner said, "The advisability of using electric or pneumatic vibrators, pulsating pads or discs, or sound waves is controversial and more research is needed, but actual installations show proof of increased material flow when incorporating such devices. Air injection of floury type feeds has been used with some success."

Pellet Bins—Center discharge tanks are normally used, Mr. Stegner said, because this type hopper is less expensive than a side or offset hopper and almost any pellet will flow from a center discharge hopper if the outlet is sized and shaped properly. The diameter of the tanks should be as large as practical and of low height. An outlet of 12 in. diameter or rectangular shape 8 in. wide by minimum 20 in. long will provide adequate flow for pellets.

When spouting into a tank, tests show fines are greater when pellets fall on steel as compared to other pellets. In a center discharge hopper, fewer pellets are spouted onto the hopper.

The height of fall is not as critical in causing damage as are obstructions in the tanks such as baffles, tie rods, etc.

Spouting from bin to bagging operator or elevator leg for load-out has many advantages as compared to unloading bins with live bottom systems. Minimized agitation will reduce breakage.

If condensation is a problem in outside tanks, a forced ventilation system may be used in cases of extreme temperature changes between day and night. In moderate temperature and humidity areas, a system of vents on roof and sidewall louvers will provide sufficient natural ventilation of the tanks.

DELIVERING BULK FEED—Pat Driscol, district sales manager for Albers Milling Co. at Portland, emphasized four points in discussing bulk delivery of pelleted and other feeds—(1) Sell bulk for what it is. (2) Properly equip the account. (3) Instruct the driver. (4) Set up a system of inspection of every load of feed before it goes out.

"To me, bulk feed has only one advantage," said Mr. Driscol. "It is a convenience and a labor saver for the feeder and should be treated and recognized as such."

He described his firm's Portland operations as an example of developments and problems in bulk delivery. He noted that three types of bulk trucks are used—air delivery, paddle or elevator type trucks and screw conveyor type. At first only the elevator type was used. But now about 75% of the deliveries are made with pneumatic type trucks. Mr. Driscol indicated that this is primarily because of the ability to get feed into more distant or hard-to-reach bins. Some feeders object to air units because of noise or the feeling that more damage is caused.

Mr. Driscol said that in delivery time, the type of equipment is not the chief factor. He said time is controlled more by convenience of bins and unloading facilities.

Many of the difficulties of bulk delivery, he continued, begin before the first load is delivered. Accounts may be too small to receive and use bulk efficiently, or they may not be equipped to receive bulk properly. Also, feeders should be advised in advance that there will be some fines in the feed. "I think," said Mr. Driscol, "that when we have our sales forces trained so that bulk feed is sold for what it is, a convenience to the feeder and nothing else, a lot of our problems will be solved."

Another point made by the speaker was that bulk truck drivers may have closer contact with customers than any other person in a feed firm. For that reason, it is very important to train drivers in good business relations with feeders. "I would rather forego a weekly sales meeting with our salesmen than to go for one week without having contact with our bulk feed drivers," Mr. Driscol said.

Regarding bins for bulk feed he said that entirely closed bins are a must. This eliminates many of the complaints and helps prevent contamination by birds and small animals.

He also urged that a system be set up so that every load of feed is inspected and a record made before it goes out. This, said Mr. Driscol, will eliminate 75% of the complaints.

ELEVATOR SPEED—Feed men at the school also saw a research film, sponsored by A. T. Ferrell & Co., showing the effect of bucket design and head pulley speed on bucket elevator performance. A speed of 45 rpm was best in this demonstration.

MARKETS

(Continued from page 2)

expected betterment in sales volume during January did not materialize. On the basis of what is known now, it looks as though March will have to prove to be the salvation for the first quarter of 1960, if there is to be any betterment.

Running time shows no tendency to increase as of now. A five-day week seems to be about the best that any of the mills have been able to do, as has been the case for some time past.

Constituent feed prices were slashed all along the line this past week, and this in turn has been reflected in some reductions on the formula product. However, these lowered price tags have not been productive of any broadening in the demand.

South Central

Formula feed demand showed only minor change this week. Some mills reported slightly improved mill running time, but the average of all plant operations continued to fall short of five days.

Cold weather with heavy snow over large parts of the area helped revive the movement of cattle feeds. Most mills still have large outstanding balances on their contracts and deliveries so far this season have gone slowly.

A little better interest developed in pig starters but buying is reported to be held in check by declining price lists. Weakness in vegetable proteins and a whole list of other commodities intensified bearish attitudes.

But most feed manufacturers feel that it's usual at this time of the year to find feeders limiting purchases and dealers holding down inventories. Better demand is expected to develop in the next few weeks.

Ohio Valley

Despite the below-freezing temperatures and frequent successions of snow flurries during the last week in the Ohio Valley, the birds are bursting into song after months of winter silence, and "the spring feeding bulge for farm animals is almost here," as one formula feed manufacturer expressed it.

And he had considerable company in this sudden outburst of cautious optimism regarding what can be expected business-wise during the coming weeks. Admittedly, the feed business was a "shade better" this week, and several manufacturers reported increases in the number of inquiries, "which usually means a revival of interest." Noted also was a "fair" movement of turkey and other poultry feeds during the week, and this business "may be just getting off its back."

But all manufacturers, however, were quick to add that the reviving interest should not be construed as meaning that any sharp business increase is to be expected immediately. Instead, the general attitude is one of hopeful optimism that business during March will move out of the doldrums in which it has been mired during the year to date.

Mountain States

Formula feed dealers said this week that their sales volume was running about the same as a week earlier and a year ago.

There is no manufacturer in this area running at capacity. A little turkey feed is being moved. Beef and dairy cattle feeds are accounting for the bulk of the business.

Pacific Northwest

Sales volume of brand feeds continued moderate during Pacific Northwest trading this week. Manufacturers reported a fairly good movement on early orders.

Oregon, Washington and Idaho feedstuff listings averaged slightly lower during the period but trading was a little more active on some ingredients as feeders and feed manufacturers anticipated needs for the next 30 days or more.

However, purchases of most items appeared largely for immediate and prompt use and were limited to scattered lots. Supplies of all feedstuffs were generally plentiful, with a further weakness noted for whole feeding grains. Some buying interest, particularly for forward needs, is still being restricted by mild weather conditions.

Formula feed quotations also posted a slight over-all price drop as a reflection of recent declines in the cost of some principal ingredients.

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Nebraska Feeders Day Program Announced

MITCHELL, NEB. — Program plans for the annual Feeders Day March 3 at the University of Nebraska Scotts Bluff Experiment Station have been announced.

Visitors will be given an opportunity to view experimental cattle and lambs from 1 to 2 p.m., according to Lionel Harris, station superintendent.

University speakers and their topics during the afternoon will include: Dr. John Matsushima, "Value of Synovex Implants in Beef Production"; Don Burzlaff, "Cattle Grazing Experiments on Native Range Land"; Dr. Donald C. Clanton, "Pelleted Feeds"; Dr. George Kelley, "Controlling Fringe Tape Worms in Feeder Lambs," and Fred Olson, "Economic Outlook for Livestock Producers."

USDA Buys Dried Whole Egg Solids

WASHINGTON—Purchase of 562,500 lb. dried whole egg solids by the U.S. Department of Agriculture was announced Feb. 18. The eggs will be distributed to schools and institutions.

USDA accepted offers from 7 of the 10 bidders at prices ranging from $1.0175 to $1.02 lb. in No. 10 cans. No purchases were made in No. 2½ cans and none will be made until further notice. About $573,000 of Section 32 surplus removal funds were expended for the purchase.

A total of 1,035,000 lb. dried eggs was offered by all of the bidders. Shipment of accepted offers is scheduled for March 4 through March 19.

Purchases of dried eggs since the program began Jan. 14 now total 5,094,600 lb. at a cost of approximately $5,175,000.

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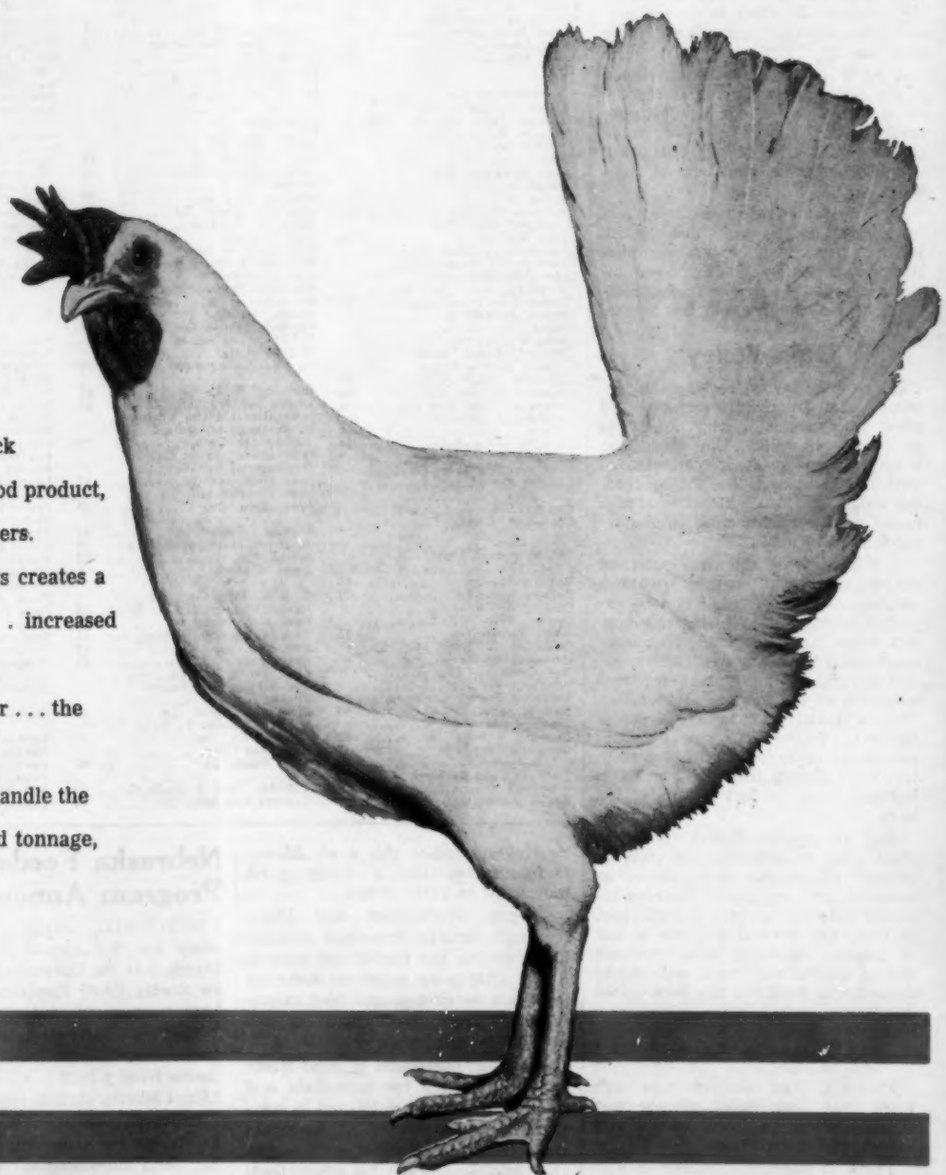

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